

## Description Methods of Kalotaszeg's Landscape Character

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**Abstract:** The article introduces ethnographically relevant aspects of landscape character and historic land use patterns for a better understanding of vernacular descriptions of landscape characteristics through the case study of Kalotaszeg (Cluj County, Transylvania, Romania). Eight topics are discussed based on hand-drawn site analysis maps and historic records: geomorphology and landform types of the Kalotaszeg terrain; water tributary system with mills; a drawn aerial model of zones; description of forest types and borderlands; history, typology and aesthetic issues of the lynchet system; landscape patterns like wooded pastures, orchards and vineyards; the results of analytical land use statistics and retrogressive analyses of landscape historical events and relicts; and finally a summary of the uniformity and diversity of Kalotaszeg and its zones.

**Keywords:** Kalotaszeg, landscape character, landscape pattern and land use, landscape aesthetics, retrogressive landscape history

Kalotaszeg, a region of the Transylvanian basin has gained emblematic fame as a treasure-trove of traditional folk motives since the second part of the 19<sup>th</sup> century during the time of national awakening and romantic discovery of folk art. Scholarly interest has been conducted with non-declining fervor ever since and Kalotaszeg has become by now one of the best documented regions of the Hungarian folk art.

I have visited the villages of the Kalotaszeg region one by one to collect data on the history and aesthetics of the landscape beginning with the 'Stana Workshop' in 2001 (when I was a member of group of students doing voluntary work) and later in the capacity as the student of the Doctoral School of Landscape Architecture and Landscape Ecology of the Saint Stephen University. During these years I made myself familiar not only with the 40 settlements populated mainly by ethnic Hungarians and accounted for as the *Kalotaszeg* region, but visited in the surrounding (mainly Romanian) areas to have an overview of this region in a broader context (116 villages, 1200 km<sup>2</sup> area North and South by road E60: Poieni – Bánffyhunyard – Cluj Napoca – Cuzeplak –

Calata).<sup>1</sup> The character shifts observed in the scenery directed my attention to the strong characteristic traits, unique spatial formation and delicate inner fragmentation of the Kalotaszeg landscape. During these field observations and surveys I put my skills in folk art and ethnic and ethnographic knowledge aside, and focused primarily to the land-use and landscape character issues. They together have drawn up the picture which was the aim of this study, i.e. to assess Kalotaszeg and its wider surrounding from the perspective of the ‘character’ of its landscape. The question was: if there are characteristic traits of Kalotaszeg culture (in music, dance, costume, embroidery, architecture, etc.) whether – in parallel with these – does a Kalotaszeg landscape, scenery, character exist just as well?

There is a common saying “Kalotaszeg extends as far as the ‘muszuj (=special long skirt)’ reaches” – but how far the Kalotaszeg landscape stretches, are there any actual boundaries, transition lines, in other words ‘*Can the ethnographic entity, Kalotaszeg be justified from the perspective of landscape architecture as a Region with its Landscape character? What is the correlation between the ethnographic region (its internal uniformity, fragmentation, boundaries) and the region analysed with the toolbox of landscape architecture and the landscape characters presented?*’

It can be known from the delineation attempts of former ethnographic research projects that the *Kalotaszeg* region – which is a unit holding distinctive character of traditional Hungarian folk art expressions, as compared to the Romanian countryside surrounding it in general –, consists in fact of 4–5 minor sub-regions (‘szeg’s), separated from each other geomorphologically but also in terms of social connections and cultural cohesion: Felszeg (Upper End), Alszeg (Lower End), Nádas / Nadăș valley, Kapusi / Căpuș valley and Gyalu / Gilău – Tordaszentlászló / Săvădisla transient area (BALOGH – FÜLEMILE 2004). This – for me clearly deciphered – division fine-tuned my research aim further: ‘*What special geomorphological forms, spatial arrangements, landscape character-patterns and historical (mainly from the 19<sup>th</sup> and 20<sup>th</sup> centuries) and current processes influencing the character of the landscape, distinguish and justify certain areas in Kalotaszeg as a typical landscape? Can we prove whether these minor differences in the landscape character of the sub-regions go along the same lines as the boundaries of ethnographic spatial meshes; how these areas can be defined and characterised from the landscape aesthetic / scenery perspective?*’ This range of questions lead us basically to the definition and description ‘*Kalotaszeg’s Landscape Character*’.

## APPROACHES IN LANDSCAPE CHARACTER RESEARCH

The problematic of analysing landscape characters emerged with Teleki in domestic geographic landscape concepts (TELEKI 1917:192): “The entire task of geographic description is crystallised around the typical character of landscapes ... highlighting the individuality of the landscape, comparative assessment of various landscapes, typical differences and typical similarities.” In the holistic approach to human geography it was

<sup>1</sup> I have published so far 15 articles and have written my PhD dissertation in the topic: *Kalotaszeg tájkarakter-elemzése* [The Landscape Character Analysis of Kalotaszeg Region], Unpublished PhD dissertation, Corvinus University Budapest, Doctoral School of Landscape Architecture and Landscape Ecology. 2013. ([http://phd.lib.uni-corvinus.hu/676/1/Eplenyi\\_Anna.pdf](http://phd.lib.uni-corvinus.hu/676/1/Eplenyi_Anna.pdf))

emphasised that as many phenomena and factors need to be attached to the '*Life of the landscape*' as possible. Dékány (DÉKÁNY 1918:9–13) looks for the '*singularity*' as the general aim of geographic attitudes, the '*geographic individual*' unique on the Earth, which defines the region as a '*complexity of local differences*'. Albeit Teleki discards the task of classification (looking at the symbiosis of the constituent components of a landscape), still he stresses that 'the smaller an area, the stronger its individuality; the larger, the less it will be'. His disciple, Fodor also supports this '*landscape biographic*' approach, in which the importance of characteristics is underlined:

“The individuality of a landscape is born, when the connections of the geographic factors co-existing in it develop to such an extent which separates the landscape from the adjacent areas with a force of unification. (...) Another significant property of the landscape is when man recognises the distinct, special characters of the given piece of the Earth he lives in. Thus, a landscape is born twice. First by the hand of the Creator, and second, by the reason of man, when its inhabitants recognise the distinct, special characters of their living that separates them from others, and give a name for this individuality.” (FODOR 1938:142–143)

This epoch before WWII reflected a clearly complex ethnographic and geographic view of landscapes, but it did not want to classify all landscapes, it merely highlighted the characteristic features of certain regions deviating from the average (such as the Jászság in the case of Fodor).

A novel holistic approach to the historical aspects, traditional husbandry and scenery identity of landscapes, regions has been put in the foreground again in the past twenty years only as an effect of the institutionalised concepts of *Historical Landscapes – European Nostra – Landscape Convention – World Heritage Cultural Landscapes – or Landscape Treaties*, which were prepared by research into landscape archaeology, human geographic, and environmental psychology in the English speaking world. From the nature protection side – even though species-level and spatial conservation did exist – the complexity of the perceptive investigation of the scenery and spatial experience of landscapes was lacking. Landscape character studies intended to make up just with this deficiency.

In the field of landscape architecture and spatial planning the most general definition comes from the school founder author, Swanwick: “Landscape character, which is the pattern that arises from particular combinations of the different components, can provide a sense of place to our surroundings. Landscape Character Assessment is a characterization process, involving identifying, mapping, classifying and describing landscape character, and a process of making judgements based on landscape character to inform a range of different decisions” (SWANWICK 2002:2–4). This character might be derived from the native vegetation cover, geomorphological shapes, historical methods of land cultivation and farming, ownership relations, special raw materials or economic exploitation.

Hungary signed the European Landscape Convention in 2005 the Landscape definition of which includes characteristics: “Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.” Government Decree No 218/2009 defines the landscape-character as follows: “A pattern or system developed from the interaction of the natural and anthropogenic factors constituting a landscape which renders a landscape distinct from other details of

the land”. Propagating landscape character studies were triggered by the introduction of spatial planning, which sees them as a background study substantiating the decisions to be made, which makes the historical development, cultivation forms of the landscape understood properly, but the role of which is not to conserve the ‘as it is’ situation, much rather provides the options for proper development decisions by keeping these characteristics in mind. The methodology of the landscape character research projects is far from being uniform, what is more, the attitude taken is prone to vary according to the purpose of the order, or the professional background of the maker. The size and complexity of the area to be categorised raise further issues even for practitioners of the trade: *Can any area be covered by a single landscape character or are there regions with a strong individuality, as opposed to undistinctive landscapes? What is the natural unit/size where – determining the landscape character in a relevant manner – an individual, coherent zone can be set up?*

Two somewhat contradictory tendencies dominate cutting-edge literature of landscape character analysis. One of them *Historic Landscape Characterisation* (RIPPON – FAIRCLOUGH 2002; RIPPON 2004) focuses on the historical dimensions and ages of historical development of landscapes, created basically on the various layers of archaeological excavations. It points out the historical elements of the contemporary functional landscape which are subject to transformation but are used up to date (for instance: game preserves, boundaries of plots, old roads), or are preserved as relics on the ground having lost their original role or function. This trend stresses the complexity of the time-phases and it intends to define its landscape historical ‘age’. Therefore it is critical with evaluating *only* on natural values or visual beauty. The retrogressive historic analysis of the last section in this article follows this approach.

The other school approaches the current image of landscapes from the perspective of the landscape planner (conserving but developing): *Landscape Character Assessment* (KONKOLY – GYÚRÓ et. al 2010; SWANWICK 2002). The purpose here is not to resist the changes influencing the landscape, much rather to provide a tool for decision makers by describing how does the landscape look like now, how this phase developed in the past and how it is expected to change in the future. The first part of the methodology is a landscape character description process, free of judgements. This looks at the region in its objective complexity based on regional, mapping and historical research (geology, climate, forest cover, etc.). It is followed by a subjective field visit based on visual, perceptual and sensory experiences, which are based on the description of the revealing points of view in photographic and drawing representations: balance and ratio; scale; density; texture; colour effects; diversity; uniformity and variety of forms (scored from a scale or selected from a list of adjectives, giving room to the personal interpretation of the analyst). This was amplified lately to ‘Visual Character Indicators’ such as: complexity, coherence, disturbance, stewardship, imageability, visual scale, naturalness, historicity and ephemera (ODE – TVEIT – FRY 2008:110). The second part of the method is an evaluative/recommendation process preparing the actual intervention: guidelines for designers to translate these into the language of practical action, defining for instance, how in a given detail of the landscape a certain type of investment or conversion of land use patterns can be accomplished whilst adverse impacts are minimised to the extent possible, pointing out by exploiting the benefits that the character of the landscape in question is possible to conserve, enrich or reclaim (KABAI 2010:101).

The background of this study is provided by my doctoral dissertation: 'Landscape Character Analysis of Kalotaszeg' (EPLÉNYI 2013), except that in the present paper the methodological steps and units of the thesis will be highlighted by attaching shorter clarifying examples and illustrations thereto. In the current research the investigation of the correlation between the ethnographic aspects and the landscape fragmentation raises special claims with respect to the method applied, therefore only some elements could be adapted from foreign methods. A critical aspect of all character analysis is the age, type and resolution of the databases available: here it was the end of 19<sup>th</sup> century.

## GEOMORPHOLOGY AND SPATIAL EXPERIENCES OF KALOTASZEG

In the landscape character assessment, the spatial structure of the relief is given special attention as a formation of terrain-plasticity. To get the diversity of views and vistas site-based surveys and field-walks are indispensable. The geomorphological structure observed was match with the basic geological condition-map (geological ages, formations, movement-processes), but since maps (KOCH – HOFMANN 1889) in themselves are unable to reconstruct a spatial experience, the geological and spatial type borderlines do not overlap exactly. The morphological and aesthetic description of the spatial forms was guided by questions as follows: *To which extent the sight of high range mountains is decisive in the landscape? Are they close or remote, flat topped or rugged? Their spatial position is open/spacious or closed like a gorge? How the rolling hills stand out beside the chain of mountains? Are there horizontal plateaus or rhythmically repetitive faults inclined in the same direction? What kind of movement dynamics can be used to express the surface forms? Do unique colours characterise these formations? How the spatial emptiness of valleys distribute the landscape?*

A conclusion of the geomorphological analysis (Figure 1) is that the Tertiary hilly region of Kalotaszeg surrounded by a mountain range is far from being *one single uniform* terrain; what is more, this landscape which reacts to the various base rocks and movements in such a versatile manner just lends itself to be broken up into zones ('szeg') possessing dominant differences (in correlation with its ethnographic segregated structure). Thirteen (A-M) spatial types were distinguished in the entire research area which provide the foundations for later called '*landscape character Zones*'. Zones are coherent area-units with distinctive character and name, based on geomorphological and spatial experiences, marked with borderline containing 7–10 villages (EPLÉNYI 2013:28). On Figure 1. the terrain morphology (relief and valley) are illustrated with small essential sketch-icons.

A = Flat, open valleys of Almás/Almaş, B = Oligocene gentle hills of transitional zone, C = Strong rolling limestone hills of Alszeg's wine zone, D = Leaning limestone hillslopes of Nádas-mente (valley of Nadăș), E = Steep side of Gyalui/ Gilău Mt. around Tordaszentlászló / Săvădisla, F = Unique horizontal plateau meza-hills of Felszeg upland, G + J = High robust mounts and deep valleys, H = Softly rolling slope-dynamic of Tömöldök / Bogdanului submountain zone, I = Relaxed, extroverted sinuous, sediment down zone around Bánffyhunяд / Huedin, K = Crack limestone drifting upon mountain foot around Kecelel / Călățele, L = Eruptive landmark of Köves – hegy vulcano in Kapus / Căpuş Valley, M = Peneplain of Gyalui / Gilău -Mt.





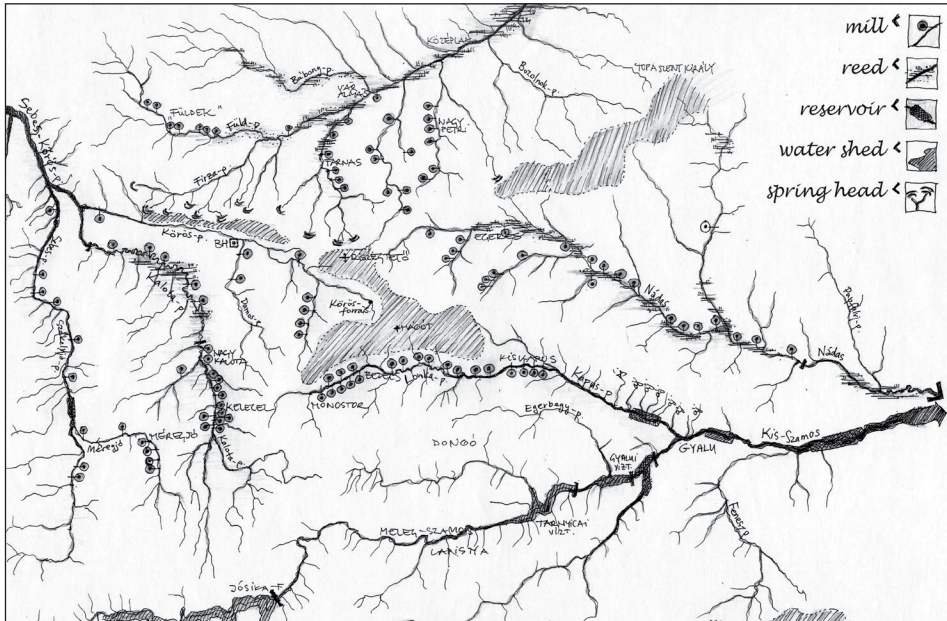


Figure 2. Water-tributary system of Sebes, Kalota / Călata, Kőrös / Crișul, Kapus-Lonka / Căpuș, Szamos / Someșul Mic, Almás / Almaș and Nádas / Nadăș streams with their mills. (Drawing by Anna Eplényi, 2013)

and be divided into several zones (I,F,H,K). Thus, in Felszeg itself, a number of different landscape character zones meet. Its compound spatial structure and complex landscape conditions might justify why this area was the ancient 'Kalotaszeg', a landscape complex standing on multiple legs.

A similarly strong switch of spatial experience can be drawn up between the animated mountain and valley shapes of the grapevine villages of the Alszege (C) and the spatial types of the less resistant, bluntly eroded, undistinctive Oligocene sediments, dominating the landscape around in the tributaries of the Almás / Almaș streamlet (A-B), thus the animated nature of Kalotaszeg loses its characteristics on this landscape flattening out in the wide expansive valley.

### LANDSCAPE ASPECTS OF WATERCOURSES AND DISTRIBUTION OF MILLS

According to some assumptions the word '*calata*' – meaning sharp cold water – is the name given of this landscape (TÉGLÁSI ERCSEI 1842:52). Going beyond the processing of the documents on mills (SEBESTYÉN 2001) which has been accomplished earlier on, a more precise distribution of the small watercourses and mill-sites in the landscape was analysed based on various maps to have an insight into the network of regional water utilisation. Namely, maintenance of the mills required systematic controlled regulation leading to a closer connection in-between the catchment area (Figure 2).



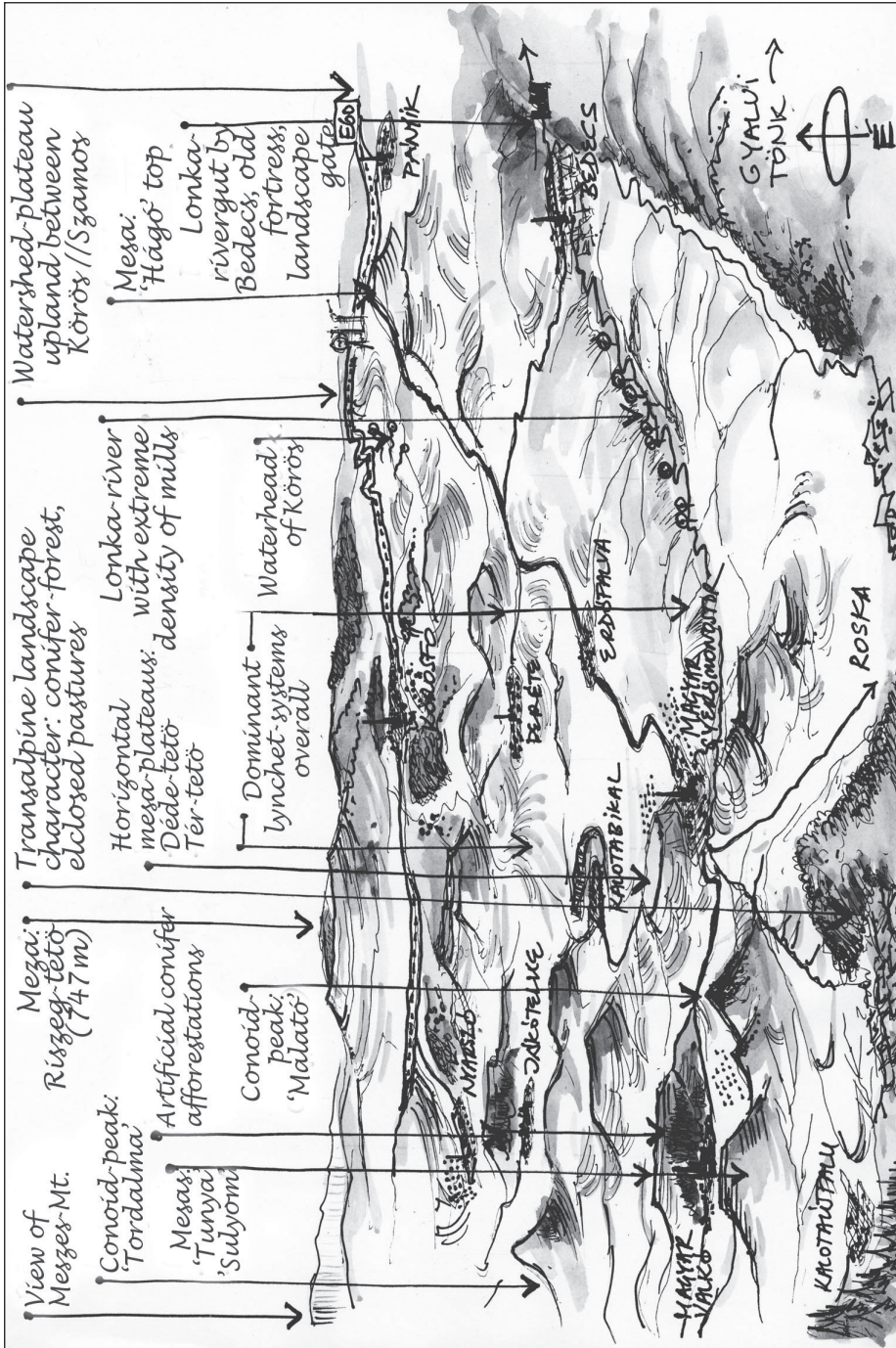


Figure 3. Geomorphological model drawing of 'Felszeg-highland' Zone. A. (Drawing by Anna Eplényi, 2013)



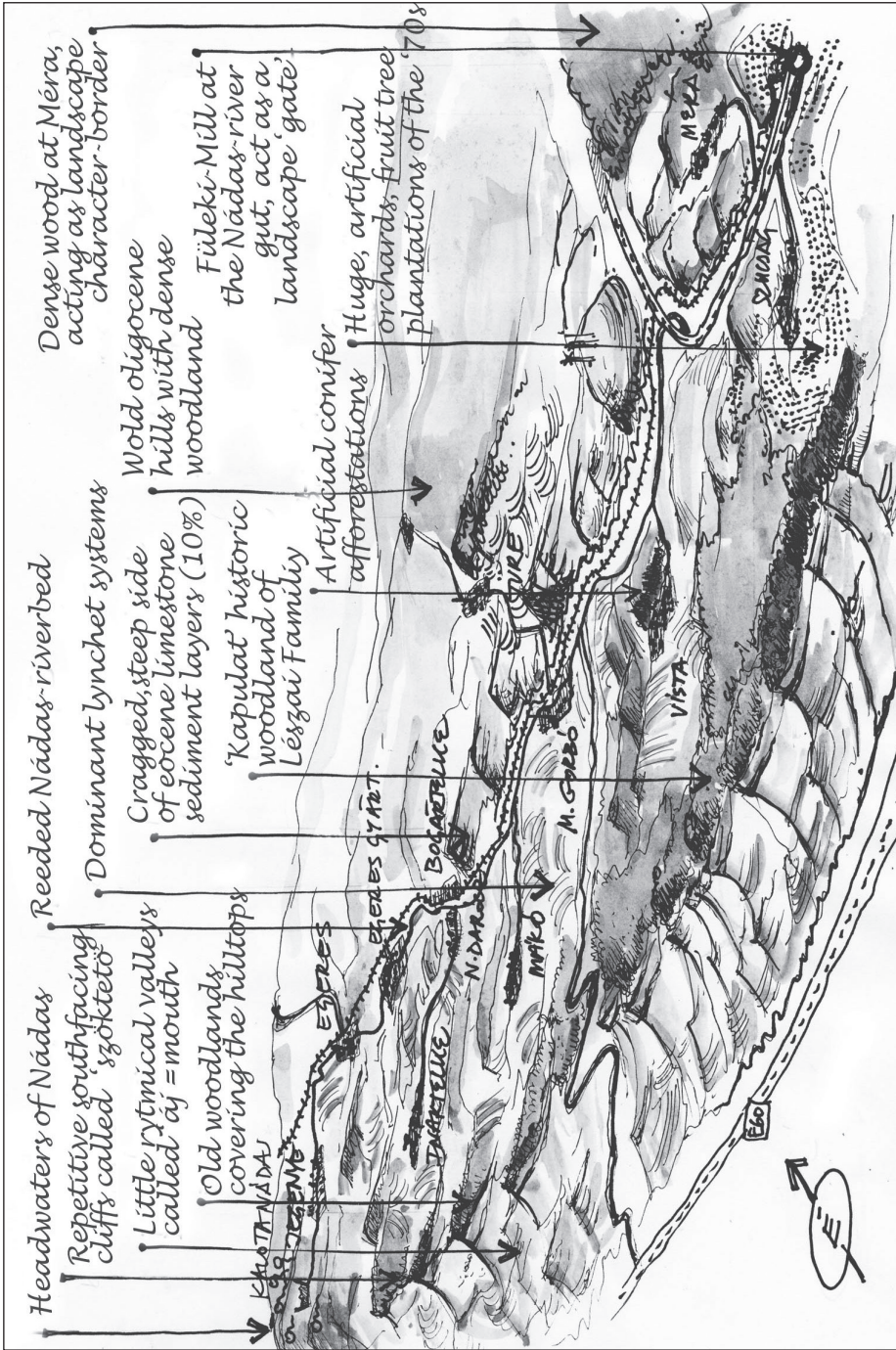


Figure 4. Geomorphological model drawing of 'Nádas-mente' Zone, A. (Drawing by Anna Eplényi, 2013)

Industrial energy demand of the landscape up to the beginning of the 20<sup>th</sup> century at Felszeg was met by the steep falling streamlets running down from the high mountain ranges and fed by a stable water flow throughout the year. Ten to fifteen mills (saw-, paper-, felt – and flour mills) on the Kalota / Călata and the Kapus-Lonka / Căpuș streamlets, respectively, processed raw materials from the alps, providing a special industrial potential to the regional economy as early as in the Medieval, reflected by the awe-inspiring church constructions of the Felszeg. Old mills, mill-wheels and mill-courses were identified at Magyarkiskapus / Căpușu Mic in terms of landscape history on my visits. The rapid flash floods of Felszeg have washed away several mills here, as opposed to the water management mill system at the Nádas-mente, where lesser water flows and gradients solicited longer mill-courses and the mill sites can still be seen in a more stable manner.

The backbone of the Nádas-mente shown in the spatial analysis above as a coherent entity is the valley, covered by reeds in many places which was even impounded in the Mediaeval to form a lake (SZABÓ T. 1942:232), and was avoided by the old postal service one series of hills further to the north due to its impenetrability. It has become an important thoroughfare of the landscape structure by now with the drainage and stabilisation works for the railway (1880) and the construction of the public road. Several mill sites were identified here as well. Ground surface forms called ‘~áj’ – meaning notch, cut, or mouth – also belong to the hydromorphology of the angular hilltops (ÁRVAY 1943). These are rhythmically repeated short but steep parallel valleys cut into the edge of the limestone terrace in NE-SW direction with periodical watercourses and provide a distinct character to the south facing slope of the Kapus-valley (nearly 25 ‘áj’-s can be seen by the E60 road: ‘Mátésáj, Kenderáj, Kiskenderáj, Harcsáj, Murkosáj, Szőlőáj’)

### GEOMORPHOLOGICAL MODEL DRAWINGS OF LANDSCAPE CHARACTER ZONES

In the earlier periods of landscape characterisation only the land-use maps and photographs showed the character of a landscape, but Swanwick incorporated freehand drawing as a significant contribution to his method, which was developed by myself to a 2.5 dimensions model drawing in the spirit of sand tables. This approach depicts the landscape character zones from an imaginative high-elevation point, thus giving a slight emphasis to the key morphological features and spatial characteristic traits of the landscape.

Morphological differences are clearly illustrated by the two respective model drawings made of the landscape character zones of ‘Felszeg-highlands’ and ‘Nádas-mente’ (Figure 3–4). A seemingly uniform upper variegated clay and coarse limestone from the Tertiary Eocene provide the backbone of both regions on the geology map (KOCH – HOFFMAN 1889) but striking geomorphological characteristics can be distinguished on the spot:

High protruding from the ground, animated, concave shaped flat topped characters erosion mesas with a powerful relief (that is, a table mountain with rock plateau or conical roof like a witness butte) are typical features on the strongly accentuated surface of Felszeg. Their edge is steep on all sides, in many places it is almost vertical, with light stony-barren pinching out of the cliffs; while the softer cavity under the limestone bank always appears with a concave slope chequered with bigger or lesser slumps

(MIHÁLTZ 1926: 144–150). Due to the low level of forestation the fifteen recurrent mesa tops show up distinctly (for instance in Magyarvalkó / Valeňi: Sulyom, Tunya, Déde, Tér-tető, M.Gy.Monostor / Mănăstireni: Várhegy and Bedecs / Bedeciu: Hágó-tető) and even the well-known topographic divide, the 'Riszeg-tető' carries unusually elegant landscape sculpture artistic associations radiating calmness. The attention of German geologists was captured by this variety of forms back in the 18<sup>th</sup> century, who described the surroundings of Magyarvalkó / Valeňi as a particularly beautiful land:

“East of the road, and not very distant from each other, are high and pointed mountains, which are free-standing in themselves, and are so regularly, alternately and nicely constructed in a conical shape, that they, when their height and size are not inconsistent for mountains, seem as if an artist would have gathered and adapted them.” (FICHEL 1780: 52–55; BENIGNI 1837:27)

Due to the upwards striving volcanic activity of the Köves-mountain (Gyerővásárhely / Dumbrava Pass) the sequence of the layers at Felszeg formed a NE direction faulting, thus the limestone cliffs in Nádás-mente reflect a regular 10° inclination in the entire zone (TULOGDY 1944:118). This asymmetric momentum in the relief strings a series of strained spatial experiences from Jegenye / Leghia to Szucság / Suceagu side-valleys. The individuality in shapes is accompanied by the typical appearance of deciduous forest patches on the top of the gently sloping plateaus and the artificial conifer plantations on the steep overhangs. Administrative boundaries of the villages in this region fit well the organic borderlines of the landscape (topographic divides, shifts in landscape structure), therefore the land use statistics derived from the agricultural data correlate strongly with the spatial forms. Cultivated terraces dominate the landscape of the entire region: the breath-taking extension of the lynchets (*'barázdák'*) covering entire hillsides.

It is interesting to observe that the extension of the easy to carve, valuable white Eocene limestone formations, typical for both zones, overlap the boundaries of the 'ethnic Kalotaszeg' in nearly 90% (!) (Figure 1. – quarries). The spots seen as erosion marks from a distance are nothing else but the remains of former local quarries, stone pits, limeworks (I identified nearly two dozens of them) (SCHAFARZIK 1904). This landscape component solicited the high standard cultivation of stone carving and its appearance in the traditional views of the communities (HÁLA 1995). This unique diversity of Eocene forms disappears entirely towards the Oligocene areas of the Almási-valley and the northern borderland, indicating a different landscape character.

### LOOKING FOR THE RIM OF A CHARACTERISTIC LANDSCAPE: THE FOREST EDGE

It was established in my dissertation that in terms of the order of priority of the components determining the character of the landscape, forest cover is the second substantial trait providing the character after the spatial experience of hilly regions. Based on the historical maps it can be concluded that the area of Kalotaszeg has not been covered for a period of nearly 500 years by extensive forests, and its forest cover adapted to the spectacular reliefs of the various zones with diverse and special situation patterns in different percentages (Figure 5). Their extent was hardly reduced over the



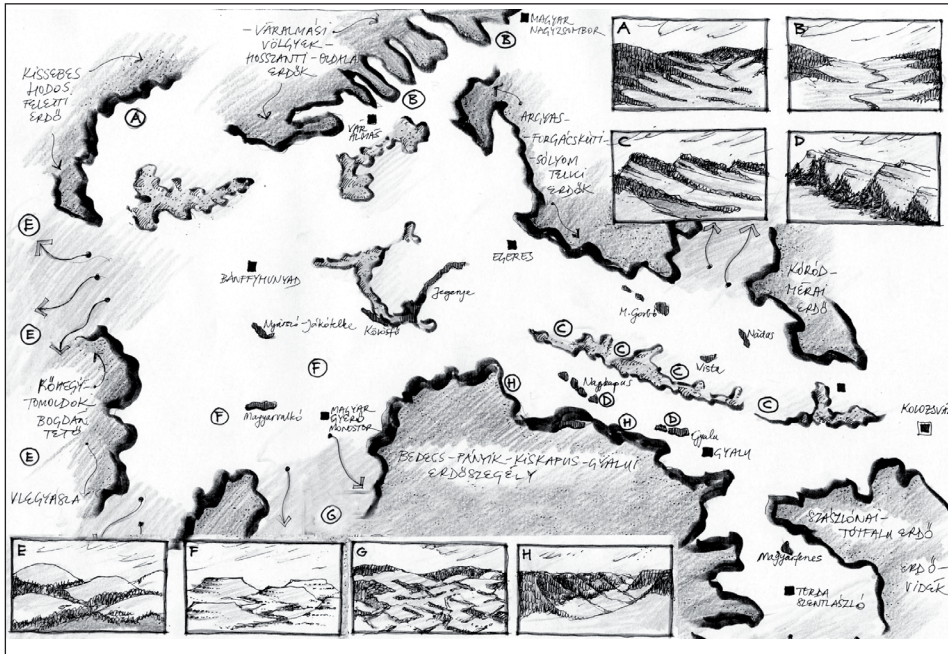


Figure 5. The forest rim around Kalotaszeg and its morphology-types with the landforms (A-H). (Drawing by Anna Eplényi, 2013)

past 150 years, and were hardly modified. Most Felszeg communities had their ‘big’ forest in a separate plot at the foot of the alps, which however did not appear on the barren, treeless landscape in the surroundings of Bánffyhunyard / Huedin. The ‘closing forest edge’ provides a marked shift in the character of the landscape silhouettes around the barren, open woodlots: in other words, wherever closed, dense forest stands appear, it can be stated that a different landscape character zone beings.

Since the turn of the century, recurrent coniferous artificial reforestations appearing in smaller spots belong to the scenery of the contemporary landscape (Pinus, Picea, Abies-species). Correlating with the geology, they appear almost invariably on the steep southern outcrops of the limestone formations, highlighting this asymmetric feature mentioned above (D: Jegenye / Leghia, Nagykapus – Gyálu / Căpusu Mare - Gilău, Vista / Viștea). The following forest+terrain morphology types could be distinguished:

A = Small articulated woodlots running down from the Meszes / Meseş showing similar forms as the alpine pastures of the Felszeg: Felsőfüld / Fildu de Sus, B = The homogeneous forests close down in the environs of Váralmás/ Almaş and its lateral valleys, dominantly changing the view of morphologically widening valleys, eliminating the mosaic pattern of the Alszeg vine zone nearby, the ‘Kalotaszeg-landscape character’ disappears here, C = Forest stands left over from the Mediaeval on the southern plateau of the tipped limestone cliffs of the Nádasmente, recurrently repeated around Inaktelke / Inucu, Mákó / Macău, Vista / Viștea (Kapulat: Papperdeje) D = Artificial conifer plantations on the steep southern slopes of the limestone formations against erosion, E = Around Sebesvár/ Bologna an ‘oppositional’ forest cover



appears, distinct from that of Kalotaszeg: agricultural terraces were set up on the more flat hilltops and in turn, the steep slopes of the valleys were left forested, F = Only lesser, narrower, stream-bank rows of shrubs and grooves can be found only among the plateaus of Felszeg, G = Quadrangular mosaic pattern of enclosed mountain pastures, bordered by alpine tree hedges, providing a distinctly different character on the foot of the alps at Felszeg, H = The huge deep forest ('Renet') of the Gyalui / Giläu-Alps around Kapus / Capuşu.

### THE CRINKLES OF THE LANDSCAPE PATTERNS: AGRICULTURAL LYNCHETS IN DETAIL

The third major group in the sequence of landscape characteristics is the group of varying landscape patterns. '*Kalotaszeg goes as long as the "muszuj" reaches*' – A symbolic correlation can be established between the ethnographic boundary of 'wearing muszuj skirt' and the extension of lynchets (ploughed terraces) in the landscape (Figure 6.). These terraces do not only bear significance in terms of land use, but they formulate the strongest pattern of the Kalotaszeg landscape character through its unique interface with the special local geomorphology. The rolling system of terraces created by the lynchets covering hillsides in shroud-spots provide a clustered-lined-striped landscape pattern. This distinguishes Kalotaszeg from the adjacent neighbouring landscape units, thus it is also a suitable means to define the it's boundaries. It is a carrier of special landscape aesthetic qualities due to its morphological diversity, ever more intensive farming and naturalness. Their visual dominance strikes the eyes of visitors, but systematic assessment reveals further details about their role and land-use functions (EPLÉNYI – FROHMANN 2011).

It was noticed during the field walks that the population here 'co-exists' with these spatial forms to such extent that they do not have specific denominations. The terms 'ploughing step' or 'farmed terrace' are not used at all, assumingly that the terraced landscape for these people is an entirely *original, natural* formation, an integral part of the landscape, the native state of the landscape, therefore it was never really given any distinguished name in earlier urbaria. "Had the man of Kalotaszeg not had the turnwrest plough – an implement well known and widely used in the rolling hilly regions of Transylvania –, the sloping plots eked out from the forest farther from the village would have remained pastures. Sloping plots would not have been tilled using the single sided wooden swing plough because the 'good earth' had been readily washed away from the inclined places by snow melt and rainfall. Terraced cultivation of the hillsides and mountainsides became possible with the help of the wooden turnwrest plough (side or turning plough), by which the humus layer enriched and improved by sheep manure dispersion could not flow from the upper plots to the lower ones". (Kós 1999:43)

The data on the development of the terraces are uncertain. Unfortunately, the first cadastral survey does not contain any detailed indications on the land-use. However, in the Cziráky-register from 1820 (TAKÁCS 2006) the fields are referred to repeatedly as '*out on the lynchets*'. The second military survey completed in 1865 indicates scattered parallel terrace line systems which cross contour lines by Mákó / Macău. It can be concluded with certainty that the greed for land arising from the famine was the main reason why forests were felled, the ground broken up and ever higher hillsides terraced. Given the amount of earth moved by manual labour annually and the height of the lynchets which

were frequently five to eight metres high, it can be concluded that they were of Medieval origin. Property boundaries on the cadastral maps generated in the 19<sup>th</sup> century perfectly coincide with the shape of the farmed terraces, confirming that the edge of lynchets served as property boundaries. The survival of them was facilitated by the skimping of the Kalotaszeg people, who accurately ploughed the borderline of their properties into the landscape by the track of their mouldboard. Wherever no furrow edge existed, the rim of the plots was marked by 'dug stones'. The terraces can be divided into four different types morphologically: (1) gently sloping and wide terraces which can even be tilled by tractors, (2) terrace systems which can be cultivated evenly, (3) narrow belt type terraces with wide banks running up to steep hilltops which can only be tilled by draught power, (4) plicate, boggy, erosion prone, disarranged, wooded terraces (EPLÉNYI 2012b).

Unfortunately, early ethnographic photo documentation rarely captured merely the sceneries, thus only the background of the events features a detail or two. Yet, some pictures taken in the beginning of the 1900s (by Zsigmond Bátky, Mihály Erdődi) show clearly that the entire area of the fields was terraced, not even once in a while could shrubs or woody vegetation be found among them. This monotonous succession of ploughland plots showed a maintained agricultural view was controlled artificially. Higher lying sloping plots in a distance from the village might have been abandoned in the first decades of the century, were only cut for hay from that time on, and grazed from the second half of the century. Comparing the pictures of A. Szabó back in the 1980s with the current state of affairs it can be seen that Romanians (for instance in Bedecs/ Bedeciu, Monostor / Manaștirenii) maintain and clear out the terrace systems, thus in those communities the landscape scenery has hardly changed. Since a well established, stabilised protective vegetation cover was set up on the furrows at the grass level consisting of permanent *Arrhenatherum* and Pannonian *Brachypodium pinnatifidum* grasslands, *Festuca rupicola* grasses, the disappearance of these features of the terrain can not be expected. The reason why weedy species appear is the micro-climatic diversity of the exposed furrows: several species settled in the inner bend setting up ever more varied habitats and increasing its biodiversity. Shrubbery overgrowth taking on an ever growing extent lately is most intensive where neither grazing, nor hay cutting take place. Mostly blackthorn, rose hip, common field maple, wild fruit associations encroach the area. Their overgrowth at the cost of hay grasses is a sign of neglect (PÉNTEK – SZABÓ, 1986:106). The current conditions are a lot more natural and more biodiverse than the earlier, cultivated stage. The new look provides a mellower, nicer scenery, highlighting the contours of the steps. Lately lease-holders who graze hundreds of sheep commenced to clear out the abandoned terraces in order to obtain agricultural subsidies from the EU. The landscape-transformation was documented by the repeated geo-referenced photographing of several archive photos (Bátky, Erdődy) at Magyarvalkó / Valeňi and the Nádas-mente in the year of 2010 (unpublished).

The landscape aesthetic essay (EPLÉNYI – KARDEVÁN – LAPIS 2010) highlighted that this dynamic relief plastic intervention created by an 'astonishing' amount of time and energy dedicated to the cause (chrono-topos) was a unique, locally specific landscape components, which can not be reproduced elsewhere, obtaining aesthetic values from the varied and rhythmically recurring interplay of light-shade, snowbreak on one hand and from the artistic effect of its natural strength which does not want to create beauty deliberately. Therefore, it is recommended for conservation not only due to its traditional cultivation throughout the history of the landscape and the decisive landscape character,

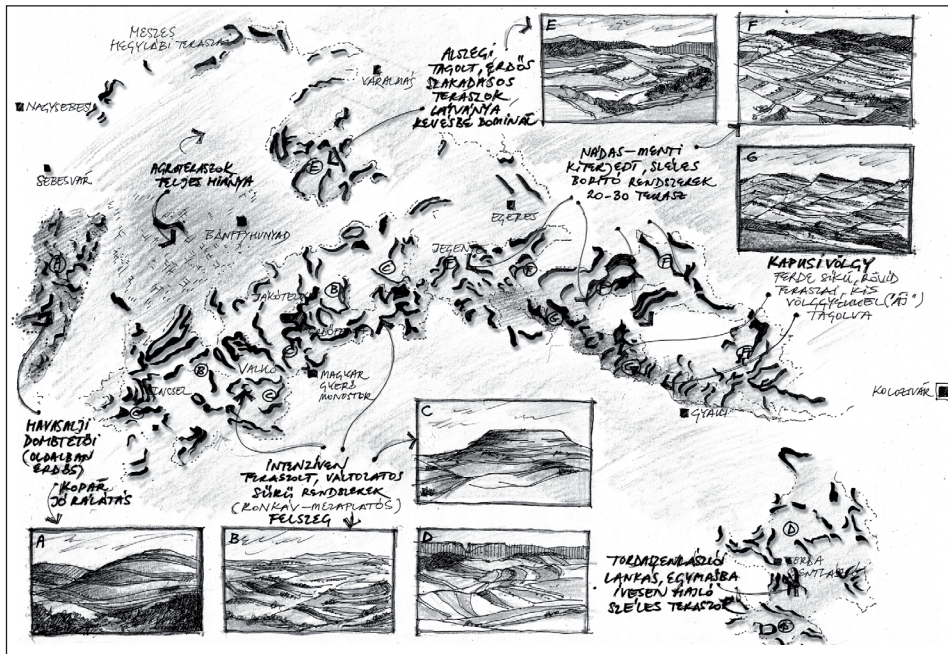


Figure 6. Visual analysis of lynchet morphology (A–G), as the most dominant landscape pattern of Kalotaszeg. (Drawing by Anna Eplényi, 2013)

but also because of its aesthetic beauty.

This type of farming was used by Romanians in the alpine areas as well, with a definite difference: while terracing in Kalotaszeg appears on the sloping hill sides below the wooded hilltops, the opposite is the case in the latter form: terraces are put on the high elevated hilltops on top of the steep, forested hillsides. The thickest expanse of lynchets can be observed on the Felszeg-highlands and the Nádas-mente, where it's borderline overlaps the zones (for instance they even disappear when you leave the region in direction NE Papfalva/ Popești, Berend/ Berindu; no terraces appear in the environs of Bánffyhunyard/ Huedin since the gentle hill sides need no terracing). The following terrace morphology types combined with ground forms could be distinguished in the area:

A = Lynchet system farmed by Romanians on the Tömöldök-Bogdán/ Bogdanului hilltops, which can be clearly overlooked due to their high exposition, B = Intensively and variedly lynchets of Felszeg highlands, where rolling intertwined large scale terrace systems were developed among the articulated valleys (Jákótelke / Horlacea, Damos / Domoșu), C = The part of the Felszeg highlands where the sharp contours of the ever steeper lynchet edges are climbing gradually on the concave mesa plateaus, D = Rolling hills with lynchets around Tordaszentlászló/ Sávadisla verify similarities with Kalotaszeg, but banks are lower, E = Infrequently folded terraces of the articulated, boggy, landslide-prone countryside of Alszeg, which are not so prominent beside the vineyards and forest spots, F = Characteristically wide and long terrace systems covering all of the inclined longitudinal lateral valleys along the Nádas-mente, G = Southern facing terrace system interrupted by 'áj' on the obliquely projecting cliffs along the Kapus / Capuș.



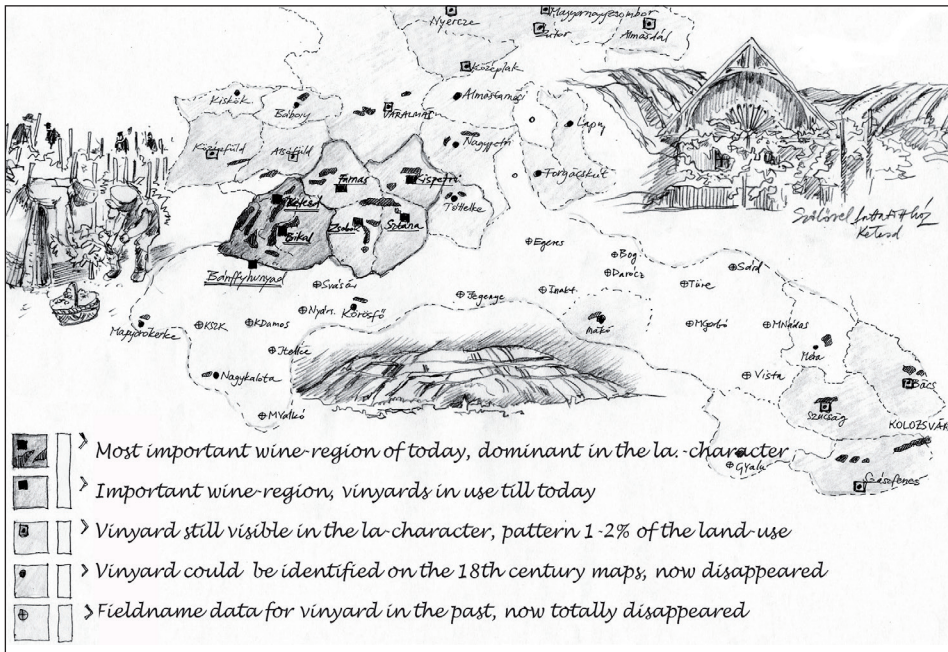


Figure 7. Classifying the importance of viticulture landscape character. (Drawing by A. Eplényi, 2013)

### SMALL-SIZE LANDSCAPE PATTERNS (VINEYARDS, ORCHARDS, WOODED PASTURES)

Statistical and cartographic illustration of the studies in cultivation types revealed that geographic statistical figures of some land use types (such as orchards, forests) reflect their significance in the scenery of the villages relatively well. Due to the lack of morphological patterns, some land use types such as *empty* meadow and grazing land (pastures) can be identified with more difficulties in this landscape, as opposed for instance to the English landscape-patterns, where the enclosing stone walls or to the Great Plain where the wind-breaking shelter-belts provide a distinct pattern structure. The only pattern structure separating clearly from that of Kalotaszeg was the Romanian enclosed-pasture settlement-form one appearing on the alps of Gyalu – Vlegyásza/ Gilău – Vlădeasa, where dense shrubberies and forests strips touching each other's in a rectangular mosaic distribution pattern cover the landscape (EPLÉNYI 2015b:39).

However, very small-size landscape patterns can also be observed: the loosely 'spotted' natural, friendly grooves of the 5–20 hectares wooded pastures, which require urgent conservation efforts because of the nearly hundred years old tree specimen in them and the scenery resembling the English landscape gardens (Zsobok / Jebucu , Körösfő / Izvoru Crișului, Egeres / Aghireșu, Inaktelke / Inucu, the most beautiful of them being the Lészai wooded pasture of Magyargorbó). The extensive geometric grid spots of orchards and plantations of the Socialist period are dominant patterns even



though ageing by now (Szucság / Suceagu, Türe / Turea, Ketesd / Tetişu) as well as the dark pattern of conifers mentioned above.

The complex landscape historical study of viticulture is an excellent example to the observation that areas which are represented in the statistics of the cultivation types with relatively small areas and low income (0.5–2%) may in fact possess a lot greater visual significance in the character of the landscape as it could have been presumed beforehand, because the mosaic image of the wattle fenced vineyards running downhill in a shape of a fan result in a more striking visual impact due to the steep exposure in the first hand. Data series of viticulture from various periods (area-size, land use ratio, income ratio, etc.) were analysed, weighed and an insight thus obtained as to the role of the 'vine-dominated landscape pattern' playing in the individual settlement. This landscape character dominates in the Alszege vine-zone both in the vernacular urban design (eagle poles with vine tendrils, grape-shaped front ornaments, grape trellises) and in landscape-scenery. Field-names alluding to viticulture indicate that one time all villages in Kalotaszeg had grapevines (!) (even Magyarvalkó / Valeňi, lying at 750m), which disappeared as the climate cooled down; but the Romanian villages did not grow grapes at all here. Searching for landscape historical relicts the first military cadastral survey indicated quite a number of vineyards; the pictures taken in Szucság/ Suceava (by Györfly 1908, Hungarian National Museum MNM F\_9316) show clearly these abandoned vineyard allotments; the shrubbery pattern can still be easily distinguished in the Alszege on googlemaps while the fieldnames for derelict '*pushta vineyards*' can not be identified even in cropmarks.

## LANDSCAPE EVALUATION OF AGRICULTURAL STATISTICS

The doctoral dissertation processed data series on agriculture from 116 settlements of the 13 landscape characteristic zones from two distinct times (area, income, methods of cultivation: forest, ploughed land, grazing land, meadow, reeds, garden, vineyard, fallow land, fruit tree types-number of pieces, water-buffalos, etc.; 116 x 2 x 75 raw data) (MKSH 1897; MKSH 1914). Indicators, weighting factors and total numbers of scores were generated using the six aspects which show the extent of *Kalotaszeg land-use character* best (= the greater the lack of forests and lack of pastures, the higher the presence of vineyards, orchards, ploughed land, water buffalos). Without going into the methodological details (EPLÉNYI 2013:appendix) a few key results are described below:

Wherever the administrative boundaries of settlements matched local landscape characteristics well, and similar land use patterns created a more uniform landscape character in the scenery as well, the statistical landscape evaluation of the characteristic landscape zones provided a very consistent picture: for instance, in the Alps Alpine-valley zone very similar *non-Kalotaszegian* properties appeared, showing that altitude, topographical and climatic conditions above an elevation of approximately 800 metres require very different agricultural arrangements which in turn modify the entire character of this mountainous landscape (Figure 8). As opposed to this, three zones provided quite uniform characteristics which were *very Kalotaszegian*: the Nádas-mente, the Alszege vine-zone and in the Bánffyhunjad / Huedin basin. Their borderlines match the landscape boundaries well and they also have similar spatial structures. Finally, some

				Landscape	Character	Factors		
Zone	Name of village	Pasture (invers)	Woods (invers)	Plow land	Water Buffalo	Orchards	vineyards	Sum of "Kalotaszegian" landscape factors
Mt	Szamosfő/ Măguri	4	0	5	4	6	6	4,1
Mt	Tarányos/ Tranișu	3	3	7	4	6	6	4,9
Mt	Havasnagyfalu/ Mărișel	2	1	9	4	8	6	5,1
Mt	Havasrogoz/ Rogojel	13	0	5	4	6	6	5,4
Mt	Viság/ Vișagu	18	2	6	6	6	6	7,1
Mt	Gyerőfidongó/ Dângău Mic	5	12	13	5	7	6	8,2
Mt	Felsőszamos/ Lăpuștești	20	8	9	4	6	6	8,5
Sm	Melegsamos/ Someșu Cald	4	0	6	5	6	6	4,5
Sm	Havasrekettye/ Răchitele	9	0	5	4	6	6	4,8
Sm	Hidegsamos/ Someșu Rece	9	2	7	5	10	6	6,3
Sm	Kissebes/ Poieni	4	14	9	5	6	6	7,5
Sm	Székelyjő/ Săcuieu	11	7	8	8	7	6	7,8
Sm	Nagysebes/ Valea Drăganului	15	8	10	5	6	6	8,2
Sm	Sebesvár/ Bologa	6	13	11	11	6	6	9,2

Abbreviations of Landscape character zones: Mt – Mountainous zone, Sm – Sub-mountainous zone  
*Figure 8.* Consistently low, 'non-kalotaszegian' land-use evaluation of alpine areas

Romanian communities must be noted which, albeit their landscape characteristics fit well the Kalotaszeg landscape, were not in the focus of ethnographic research so far: such as Tóttelke / Gălășeni, Dank / Dăncu, Alsófüld / Fildu de Jos, Nagykálota / Călata, Malomszeg / Brăișoru, Magyaránás / Nădășelu.

### KALOTASZEG LANDSCAPE SUMMARY: UNIFORMITY OR DIVERSITY?

The ethnographic traits substantiating the uniformity of these three/four regions within Kalotaszeg (costume, embroidering, decorative wood carving, dancing etc.) are well known facts, including in parallel the marked distinctions across these regions (the method of pleating skirts, differences in shoulder plates and headdress position, dances with inward and outward spins, modest and crowded pearl embroidery, differences in front decorations, etc.). Similar aspects of landscape characteristics and analysis were arranged the same way below:

Zone	Name of village	Pasture (invers)	Woods (invers)	Landscape Plow land	Character Water Buffalo	Factors Orchards	vineyards	Sum of "Kalotaszegian" landscape factors
Nm	Bogártelke/ Bágara	6	16	15	16	9	6	11,8
Nm	Magyarvista/ Vištea	9	9	14	19	13	6	12,0
Nm	Nádasdaróc/ Dorolțu	8	14	14	16	11	6	12
Nm	Jegenye/ Leghia	7	16	13	13	18	6	12,1
Nm	Méra/ Mera	21	5	13	15	14	6	12,2
Nm	Egeres/ Aghireșu	8	13	16	14	17	6	12,4
Nm	Szucság/ Suceagu	7	13	13	13	21	9	12,5
Nm	Magyargorbó/ Gârbău	12	13	14	16	17	6	13,0
Nm	Magyarnádas/ Nădășelu	8	18	14	17	14	6	13,1
Nm	Inaktelke/ Inucu	12	18	12	17	18	6	13,8
Nm	Mákófalva/ Macău	12	14	15	16	19	7	13,8
Nm	Türe/ Turea	18	13	15	18	15	6	14,2

Abbreviations of Landscape character zones: Nm – Nádas-mente river valley

Figure 9. Uniform high land-use results of villages of Nádas-mente valley demonstrating a 'very-kalotaszegian' character and strong cohesion

Landscape characteristic traits demonstrating UNIFORMITY	Landscape characteristic traits demonstrating DIVERSITY
Articulated, animated, complex and coherent terrain with high relief forms consisting diverse valley structures. Wide open alluvial type of river valleys is not a typical feature.	The only exception from the rolling topography is the zone of the Bánffyhunjad / Huedi basin, which is gently sloping in character, yet the mountain regions appears as visual backdrop.
Tertiary sediment formations such as the overall geological belt of the Eocene formations and the marked whitish outcrops thereof connect Felszeg, Alszege and the Nádas-mente. All this stone-use disappears on the Oligocene Váralmás / Almașu valleys and the Neogene layers found towards the Mezőség (Transylvanian Heath).	The silhouette sight of the high ranging mountains of the Vlegyásza / Vlădeasa show up well only from the waterline – from the open Bánffyhunjad/ Huedin basin, the Felszeg highlands – and from some villages of the Alszege, but it hardly has any impact on the Nádas / Nadăș Kapus/ Căpuș riversides.

Stone pits and quarries situated on the lower and upper coarse limestone of the Eocene (including the landscape injuries they cause): they reflect industrial landscape historical activities over all.	The morphological and spatial diversity of the Eocene formations: horizontal mesa plateaus of Felszeg differs strikingly from the askew, slant plane angular hilltops along Kapus / Căpuș and Nădas-mente.
Medium level forest coverage and edge effect: the loosely scattered woodlots converge and created a sharp borderline. This deep forested boundary nearly encloses Kalotaszeg.	Inner differences in proportions of the forests show significant variations across zones and regions (Felszeg: rather low, Nădas-mente: medium, Alszeg: high).
The expansion of the landscape lynchet characteristic pattern. This is common feature in further regions of Transylvania, but disappears here in the adjacent areas around Kalotaszeg.	Lynchets appear in individual zones in a different geographic distribution and varying pattern density (for instance less in Alszeg and Bánffyhunyard / Huedin zone).
The extent of buffalo husbandry in the 19–20 <sup>th</sup> century and its highly evaluated landscape value can be deemed to be a common trait typical for all parts.	No artificial erosion-control pine plantations are typical for the Alszeg, as opposed to the Nădas-mente, where they are more frequent.
The range of traditional orchards and gardens and their relatively highly scored landscape value can be defined as an important unifying character.	Large expanses of grid type orchards planted in the 20 <sup>th</sup> century dominate only in the Nădas-mente zone and certain parts of the Alszeg.
The presence of vineyard was typical for Kalotaszeg as a whole but it has disappeared from a number of communities ~19 <sup>th</sup> century.	A wider historical significance providing a strong landscape character of grape vine shows up only in six village of Alszeg today.
A common mark featured by the Czikáry-survey was the poor quality, ruptured, stony soil, erosion wounds and slides (but it was much better in the Almás (Almaș valley and NE).	Wood pastures hold a strong landscape character pattern along the Nădas-mente but are missing from the Felszeg (only one by Kőrösfő / Izvorul Crișului).
A more extensive, agricultural land use pattern prevails; spontaneous shrubbery growth in the fields reinforced the perceived naturalness.	Intensive industrialisation, suburban sprawl characterises the area around Bánffyhunyard / Huedin, Egeres / Aghireș, Szucság / Suceagu and the Kapus / Capuș-zone.
A common urban character is the closed façade order, where buildings with rich wood-ornaments constituted a strong street front.	The strong visual scene of the high rising shingled Medieval church is only significant in the Felszeg and the Hunyadi / Huedin basin.

The question was to which area these changes had a major or lesser impact and how they influenced the scenery and character of the individual basins and valleys.



## RETROGRESSIVE LANDSCAPE HISTORICAL CHANGES OF KALOTASZEG

In my doctoral dissertation only a superficial assessment could be dedicated to the spatial and temporal changes of the point-like unique landscape relict-elements, so a separate paper and presentation (EPLÉNYI 2012a) was used to analyse the changes of a given period. Beside the conversion of the land use types of the mostly farmed spotty plots (which had the largest impact on the variations in the landscape), in many cases just individual elements or single interventions are in the position to lend a new identity and quality to the region. During landscape-archaeological field walks based on historical maps, resources, cart road research, field-names (SZABÓ T. 1944) studies and oral history dozens of neglected, relict land use components were found and recorded. Many of them can only be encountered in features of the terrain almost unidentifiable by now, and few still as a garden-fragment (EPLÉNYI 2015a).

Rippon in his work suggests an analytical method of going backwards in chronological sequence, that is a 'retrogressive mapping' of landscape historical assessment. According to his opinion, the landscape image of ancient ages can be seen more clearly when the event layers of the near past are peeled off, thus the superposition layers of the landscape patterns ranging from the Bronze Age up to date can also be distinguished better (RIPPON 2004). The method looks for an answer not only the processes which took place in a given era, but how a given landscape detail looked like before the events of the subsequent ages would have settled on it. According to my personal experiences this method is useful because when the better known and better documented – sometimes over-represented – events of the near past are 'scratched off' layer by layer, the spatial distribution and dynamics of the landscape changes can be mapped more in depth.

The method used the following steps. (1) Assessment of resources, research of the professional literature, map analysis and field inspections on site were used to identify the chronological sequence of the events which have been learnt, and they were classified in 20 to 50 years long periods along the history. 15 to 20 'landscape events' were gathered for each period. A lot more recorded, documented change can be identified from the past 150 years and they can be indicated with a lot more accuracy, too. (2) Having collected 'landscape events and objects' they were projected onto contemporary maps masked out in black (mill, powder-magazine, village inn), or, if their visual impact range was larger (highway junction, open mining pit), a paler circle was drawn around the object in question. Archive and contemporary pictures or maps were attached to the events as an illustration to present the visual impact of the object or event. (3) After the event list of each period and map analysis the nature of the '*not yet encountered and/or already emerging*' events can be defined. (4) Finally the masked out events of all periods were projected on each other so that the earlier a period the paler it showed and the contemporary events appeared in a darker tone (Figure 10). In the course of this summary the spatial and chronological dynamics and relationships of the landscape changes could be identified. Below, two eras are presented as examples:

### Example (1): *Landscape changes in the Socialist era (1950–89)*

The organised public administration and state governance of the period resulted in several large scale changes leaving permanent imprints in the landscape, the most dramatic and

at the same time irreversible being the transformation of villages and urban street views. The inhabitants of the still densely populated rural areas ‘modernised’ their habitats using cheaply ‘acquired’ raw materials but resulting in poor quality constructions, demolishing the traditional buildings. Albeit industrial buildings and factories had a wide visual range, yet their surrounding was usually properly designed, controlled and in many cases planted with trees in a demanding way. Artificial, grid-planted orchards and black pine plantations resulted in serious transformation of the landscape in the fields of the communities; tractor cultivation on hilly regions had a lesser impact on agricultural terraces. Many traditional husbandry and farming methods were abandoned at this time (hemp, harvesting with the reaper hook, mills, locations for basket willow, clay pits, fish ponds, stone pits), the former earth work of which can hardly be identified today. River regulations and road constructions, afforestation of roadsides provided a new touristic quality to mountain landscapes: the surrounding of the Apuseni-Mountain range develops to an important destination for excursions. The most dramatic intervention related water management took place in the Kapus / Căpuș and Kis-Szamos / Someșul Mic valley, where barrages and river bed regulations transformed the view of the valley.

*Example (2): Landscape changes triggered by railway construction works (1870-1920)*

After the development of the railway a deeper possibility opened up to become more familiar with the so far unknown landscape units of Kalotaszeg and to exploit their raw materials, therefore after the construction of the railroad large stone pits, quarries, plants and limeworks open one after the other to serve county level or even national markets; export opportunities of handicrafts call away people from the plough. However a growing number of population still earns a livelihood by intensive farming, which is proven by the entire fields being under the plough, thus participation in agricultural training programmes is not so high as anticipated. The image of the fields was determined by the maintained system of plots, without any spontaneous vegetation cover. Castles, manor houses are important focal points of economy, but not of the same significance as they were along the rivers of Szamos / Someș and Maros / Mureș. The city and village view is simple, modest and rural in nature, only a few buildings of Jewish merchants, houses of lawyers and magistrates, eventually the headquarters of economic operators stand out from it. Wattle fences, thatched roofs and sweep-pole wells dominate the scattered, less neatly arranged settlements. During the period from 1900 up to 1920 an area with the size (approximately: 14 800 acres) has been transferred from Hungarians into Romanian proprietorship, mainly due to the high level of taxes. The first discovery of the alps by the tourists connects Kalotaszeg with the landscape experience of the “Havasalja” (subalpine), and simultaneously the Keleceli / Călățele narrow-gauge railway is built. A coordinated management system of water-courses, mills, and mill courses is operated. Vineyards and viticulture declined during the vine-pest infestations (phylloxera), grape vine survived only in the Hungarian villages of the Alszeg.

**Conclusions from the retrogressive landscape historical analysis:**

A key driver of landscape changes is the service and supply to meet the growth demands of the ‘big-city’, thus new tendencies, objects to serve material, food and energy requirements appeared always around them (Serving Kolozsvár / Cluj: the Roman quarry at Băcstorok / Bačiu, contracted vineyards at Szászfenes / Florești, village inns, electricity

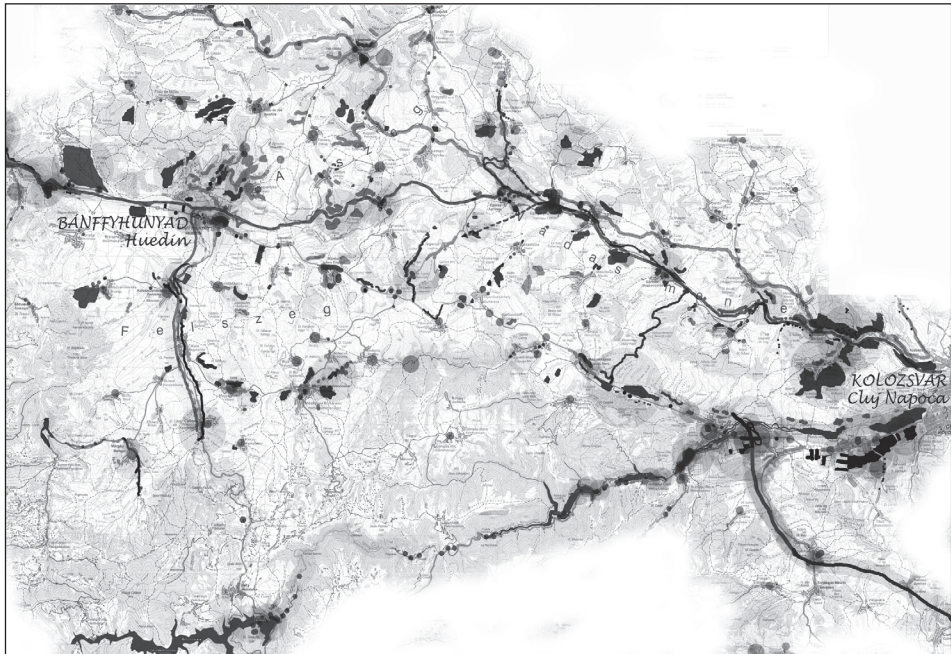


Figure 10. The retrogressive landscape analysis of Kalotaszeg: all time-periods are masked on top of each other (darker closer to the present). (Drawing by Anna Eplényi, 2013)

station of Gyalu / Gilău, suburban industry, urban sprawl), and thus the changes started to become gradually larger in areas and more intensive in extent.

Landscape changes have always followed international tendencies prevailing in the era of their respective periods and the global impacts were felt: logistics centres, urban sprawl, fuel stations, water dams and reservoirs, railroad constructions, postal inns.

Before the railroad construction works and emancipation of the serfs landscapes were exploited on the basis of their inner potentials, adapted to the local strengths and opportunities, in a flexible but dependent relationship. After the 1870s industrialisation located sites in a more rigid way, where a very strong dynamics of changes occurred, causing ever growing and ever more complex changes in the landscape one layer after the other, like a avalanche-sequence, for example:

*“Railway tunnel by Sztána-hill > a four rail tracks shunting place needed for hauling locomotives > it develop into an important railway station > the Varjúvár residence by Kós is built here > due to this decision the Sztána summer resort is erected > today it has a touristic role;” or: “The main building of the Kramer-gypsum factory in Egeres > small quarry pits are born > a railway shunting station is constructed > brown coal mining is launched > industrial infrastructure is expanded > a new settlement is set up (Ferencbánya/ Ticu) > the wooden church is relocated > need for a large electricity- transformer > transformation of the Jegenyé/ Leghia mining district > long wire cables in the landscape > Egeres / Aghireş factory estate is set up > new Orthodox Basilica and large block-housing developments.*

These increased and violently created 'changes', however, settled on the landscape in a very stiff, rigid way. It lost its flexibility and any further needs for change could only be accommodated by building secondary structures, thus objects, having lost their original function, are stiffened become an eyesore, causing severe injuries to the landscape.

The most important single landmark elements of the 18<sup>th</sup> century were churches, mills, manor houses and country seats and village inns, serving as points of orientation in the mesh of cart roads, and preserved their significance up to 1950, when due to motorisation a lot stronger hierarchy of roads was gradually formed and the main body of traffic was shifted to main roads, by which the points beside farm roads lost their function. Only former postal inns survived. In a parallel way, the perception and living of the landscape only from the main roads became dominant: sights and views were permanently perceived from the direction of the motorways and most contemporary changes are also associated with international roadside.

The linear earthworks of railroad construction at the time have been embedded into the landscape by today; but the effects were wide branching and induced a lost more important, radical economic process still prevailing today: new materials, colours and style of rural scenery (Nádas-mente).

Less changes can be identified in predominantly agricultural and forestry areas (they are diffuse processes, perceptible slowly only). Thus the scenery of an agricultural land could be more permanent and stable, so the 'oldest'. However, the rate by which nature re-conquered the land (because of abandonment of the rural settings in the past 50 years) was never been so rapid in the past.

In terms of geomorphology the most significant changes could be associated with mining and stone quarries, the abandoned pits of which have been overgrown by grass quite readily appear today relicts; yet, landscape injuries caused by expanded mining today can only be healed by conscious landscape design.

The conscious, planned changes in the landscape caused by the Communist regime were implemented on a large scale and created long term three dimensional, volume effects, able even to transform the entire aspect of the country. These investment projects: barrages and reservoirs instead of lake surfaces; the goal was to create plantations and pine woods covering the hill sides, and the massive blocks of factories protruding above the villages appeared as new, arrogant focal points in the landscape.

## CONCLUSION

Unfortunately because the lack of spatial planning, land-use regulations and landscape master plans the above tendency is likely to go on in the future, unless the field of landscape architecture and the toolbox of landscape character assessment is not used. We hope, that this PhD research can establish a future step toward the protection of Kalotaszeg's unique landscape character and historic heritage, as the the Preamble of Council of Europe's *Landscape Convention* (CETS 176. Florence, 2000.) claims: "*Believing that the landscape is a key element of individual and social well-being and that its protection, management and planning entail rights and responsibilities for everyone.*"



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