LANDSCAPE CHANGE FEATURES IN THE SOUTHEASTREN-VÖLGYSÉG

THESIS OF THE PHD DISSERTATION

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The applicant met the requirement of the PhD regulations of the Corvinus University of Budapest and the theses are accepted for the defence process.

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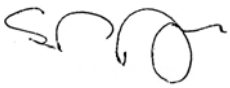

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1. Introduction

Apart from catastrophes, consequences of natural phenomena usually only after long time cause noticeable changes in the landscape. Rapid alterations are made by man, population using the landscape. Such changes occur after agrotechnical innovations, turns of economy, critical periods, epidemics, wars or, quite rare, in cases if, a native population of a given landscape is replaced by another population that formerly lived in a very different landscape.

The choice of research topic made it useful to seek such sample territory where human changes mentioned above soon caused basic landscape change. I supposed that with knowledge of natural features of the area, by discovering history of changes in population, economy, sociology, agotechnology such characteristics can be detected that are of key importance in regard of rapid landscape changes. From other areas I found Southeastern-Völgység suitable as from 18th century until nowadays its population altered twice almost totally.

With my research I would like to contribute to work up landscape history of Hungary, specifically the Southeastern-Völgység. Landscape history is an actual topic since the change of the political system when formerly secret historic maps and aerial photographs became available. The topic is constantly researched in institutes dealing with territory and landscape and presented in publications and conferences. Although in these works empirical results going further than literature facts get smaller emphasis. In this doctoral research I put great stress on local discovering and documenting materialization of the human-nature interaction. Because of formal restrictions these materials are published after the text in the annexes however they are essential elements of the dissertation. With the exploration of landscape history relations of Southeastern-Völgység I would also like to contribute to strengthen consciousness of identity, links to the landscape of present population of the area and to a well-balanced and aware future land use.

2. Objectives

When researching the interaction of nature and man the history of a given territory of land can be discovered in detail. This knowledge is inevitable for understanding of present processes and establishment of future development. I carry out my researches on Southeastern-Völgység with partly that objective that by recording landscape history of this less well-known territory of Hungary I may contribute to favourable future landscape utilization and working out of well-set proposals and methods connected to this area.

Objectives of research:

1. Discovery of landscape history of the research area.
2. Support of landscape history with empirical data obtained from on-site research.
3. Determine specific features of landscape alteration.

In the second half of 20th century in Völgység change of the population was the factor that started mechanism of landscape change, which resulted a landscape character totally different from the former one: change of land-use went with functional change of built-up areas. On the cultivated land, used by co-operative farms, vineyard plantations, forests and artificial lakes, fishing ponds appeared. It is very important to research and understand reasons and ways of origin of these as today's landscape is also a consequence of existence and interaction of the above mentioned elements.

In the last 50 years major changes happened on the research area that profoundly altered landscape, which was created under centuries by family-farming crop- and vine cultivation and stalled animal breeding. Change of population of villages led to significant change in land

use of vineyards and steep cropfields and later collectivisation of growing resulted in total modification of former landscape elements and structures.

This area is a good example for such territories of Hungary that appear as “obscure zone” on the imaginary map of our country but hiding lots of values waiting for discovery, maintenance and utilization of which is presently unsolved, however both locals and visitors could benefit largely from them.

3. Material

3.1 Borders of the research territory

The researched area lies in southwestern part of Hungary, close to Pécs, Bonyhád and Szekszárd and because of its special landscape, historic and ethnographic features form a unit (Annex 3: 1.-6. picture). I use the name of Southeastern-Völgység for this area that covers territory of eight (according to the present public administration) contiguous villages lying eastern of Bonyhád. Settelements are the following (in alphabetical order): Alsónána, Bátaapáti, Cikó, Grábóc, Mórágy, Mőcsény, Ófalu and Szálka. Total area of the villages is almost 12 000 ha (according to Takarnet data from 2009) and total population is almost 4500 (according to KSH data from 2001).

It is important to use an own areal definition as the present bordering, considering landscape history, land use and land structure, differs from the foregoing. In accordance with landscape geography Völgység lies western from Bonyhád, while area eastern from Bonyhád is considered to be part of the Szekszárdi-hills (Marosi, Somogyi, 1990). According to former public administration the villages, apart from Ófalu and Zsibrik, were part of the Völgység township. Ófalu and Zsibrik belonged to Baranya county on map by Manó Kogutowitz and Ófalu remained there util today (Annex 3: 3-4. pictures). Research area partly belongs to watershed of Rák- and Lajvér-brooks, but the total watershed is not included in the research territory.

The chosen area is a geographical unit and can be well separated from the neighbouring hilly landscape by its specific geomorphologic feature. The difference is that hills and valleys are sitated more densely in the area of the eight villages than in the neighbouring settlements. This result a very diverse surface divided densely by hills and brook valleys. Because its diversity the southeastern part of Völgység is also called “Switzerland” (Kolta, 1995. p. 8.). Research area is bordered from north by Sötétvölgyi-forset, from south by Mecsek hills, from east by Szekszárd-hills and from west by Bonyhád city.

The outlined area can be destinctively separated from the Danube valley both geographically and historically. The linear range of hills spaning south from Szekszárd, sign a sharp border between the floodplain of the Danube and the hilly land lying western from it.

3.2 Time span of the research

Since the Ottoman occupation of Hungary data is available about the landscape utilization of Southeastern-Völgység. In 1585 in Grábóc Serbian population built an orthodox monastery and since then written data remained about way of life of monks and the believing.

By the end of the Ottoman occupation inner circumstances of Hungary changed significantly; this change reached such a measure that not only regional systems had to be reorganized but also the huge number of demolished and abandoned settlements had to be repopulated by foreign settlers to revitalize and reuse the land. With the appearance of new population in the middle of 18th century in Völgység a very new kind of development started in the area.

I began my research few decades before the arrival of the new population from the beginning of 18th century to get the difference be felt between landscape before and after resettling. The other end of time span of research is nowadays, I paid attention to local processes until the closing of this manuscript.

3.3. Survey of literature

The landscape research was based on lots of resources. I aimed at discovering literature most comprehensively but despite my effort yet unknown resources might appear in the future that may make necessary some modification of my statements. Resources of my research can be divided into two groups: primary and secondary resources. Primary research of resources covered on-site walking under which I made sensory observations and empirical data collection on both the given landscape and the connection of landscape and its population. I carried out the latter part of research by studying ethnographic collections and by oral communication and by making interviews.

Primary resources:

- On-site researches (7 times, in all seasons)
- Oral communication (7), interviews (7)
- Ethnographic collections, collections of museums:
  Bonyhád, Völgységi Museum
  Pécs, Janus Pannonius Museum
  Mórágy local history collection
  Hőgyész local history collection
  Ófalu local history collection of German Ethnic Museum
  Mecseknádasd local history collection of German Ethnic Museum

Literature on alteration of the landscape is ample so I had to filter generalised data to gain relevant settlement-scale information. Besides written resources maps and aerial photographs were also very important that helped me to localize data from literature, to get an overall view and to compare local processes periodically.

Secondary resources:

- Written resources: books, studies, doctoral dissertations, conference proceedings, journals, internet materials (see detailed in the List of Literature)
- Statistical resources: paper based and online data of the Hungarian Central Statistical Office, data of national census, online territorial statistical data from VÁTI Teir and Térport systems
- Maps:
  From Military Map Archives of Museum of Military History
  I. military mapping, section XII. 30-31. scale = 1:28800, 1783-1784
  II. military mapping, section XXX. 61-62, XXXI. 61-62. scale = 1:28800, 1856-1860
  III. military mapping, modified edition, section 5461-III., -IV., 5561-I., -II. scale = 1:50000, 1943
  1:25000-scaled military topographic maps:
  L34-62-A-a, b, c, d sections, 1953
  L34-62-A-a, b, c, d sections, 1979
  L34-62-A-a, b, c, d sections, 1987
  From Map Archives of National Széchényi Library
  Joseph Lichtenstern's map on Tolna county. 1795
  Map on Tolna county made by Joseph Schneemann to György Majláth. Scale = 1:45000, 1818

Overview map of Tolna county. Scale = 1:144000, 1870
Map of Comitat Tolna. Scale = 1:420000, 1880

Other maps

Touristic map of Szekszárdi-hills, South-Sárköz and Gemenci-forest. Scale = 1:40000
Map of Tolna county, Scale = 1:200000
Map of Baranya county, Scale = 1:200000
Manó Kogutowitz: Hand atlas of Hungarian counties, map of Tolna county. Scale = 1:355000, 1905
Manó Kogutowitz: Hand atlas of Hungarian counties, map of Baranya county. Scale = 1:355000, 1905
Cadastral property map of Mőcsény 1934, section No. V. 19. bf. cf., available: local government office Mőcsény
Cadastral property map of Zsibrik 1864, Steueramt Bonyhád, section No. V. 19. bf. cf., available: local government office Mőcsény
Survey and plan made by János Podolay in 1817 on watershed-management of Völgység-brook, available: Archives of Tolna County, Szekszárd

- Photographs (own pictures)
- Aerial photographs
  From Military Map Archives of Museum of Military History
  From 1953 and 1979
- Space images
  From Google Earth program from year 2004 and 2006.

4. Methods of research and analysis

I applied empirical, analog and digital methods for processing **primary resources**:

During on-site walkings I made empirical sensory observations and took photographs and sketches to record collected data. Sensory visual observations aimed either discovery or verification. Discovery-aimed research was carried out when I collected data yet unknown from other resources, e.g. exploring values of local architecture, not shown by maps or aerial photographs. Verification-aimed research was done after I got some information from the literature about a given landscape element or land-use and I tried to recognize marks of the former element in the present landscape and tried to find reasons of change of the landscape.

Oral communications were interviews or free talks about the research topic. I immediately noted down data gained from these talks and I grouped information later. In case of missing or contradictory data I supplied and corrected informaton later with former interviewees.

Ethnographical or local museum collections gave valueable material that referred to land utilization in periods of the research area. I made digital photos about the relevant objects.

I applied also empirical, analog and digital methods for processing **secondary resources**. For more effective work I divided research into sub-topics (e.g. forest sub-topic, agricultural land-use sub-topic, water system sub-topic, architecture sub-topic etc.). Analysis of literature was always done by focusing on a chosen sub-topic. Not only written but numerical data was very valueable. I made effort to convert various measurements to the presently used ones. Numerical data was included in tables and charts.

When discovering landscape change maps are indispensable. I worked up maps with a combined method of using sensory observation and geographic information tools. First step was thorough visual study and comparative analysis of maps from each period. I gained lots

of various information from the comparison. Important factors were change of administrative borders, surface cover, water system, area and structure of settlements.

Beides sensory observation I used computer-based techniques also: I viewed and edited digital photos with Irfan View and Photoshop CS2 programs. Editing consisted of joining sections of maps, improvement of image quality, cropping image details and highlighting some photo details. For geographic informational analysis I used Auto Cad 2004 program: I carried out simple area calculations (for fishing ponds, watersheds and length of roads etc.).

Data gained from sub-topics of research are presented by topics in the dissertation. My aim was with this thematization to give sub-topics the function of a landscape indicator and so present degree, period and actors of landscape change step-by-step by each landscape element.

In order to make better understanding of the text part of the dissertation I illustrated my work with annexes. These annexes are essential as they not only colour up the text but also serve as proof of my statements.

5. Results

Before stating the theses of the research it seems useful to briefly summarize landscape change from 18th century until today. It is possible to emphasize phenomena that caused alteration of landscape under various periods and to point out features that affected landscape of the Southeastern-Völgység.

5.1 Summary

Southeastern-Völgység, consisting of eight villages and five inhabited sub-villages, is a landscape unit, which decidedly differs from the neighbouring areas by its natural features (mostly geomorphological) and way of life of the population.

Among natural features it is geomorphology that determines landscape utilization. Average height difference between valley bottoms and hilltops is 100 meter. Hillsides are generally steep sloped, large portion of formal agricultural fields are steeper than 15%, former vineyards sometimes 25%. Duration of possible sunshine in the valleys is largely limited. Plateaus are small and valley bottoms are narrow. Lajvér-brook, east from the watershed at Mőcsény, flows to south, while Rák-brook western from the watershed flows to north.

The soil is loess apart from Mórágy where vulcanic granite appears on the surface. Climax vegetation is oak and beech forests on hills while in the valleys mixed perennial grass species.

During the Ottoman occupation only Serbians lived in the area in villages quite at the same place as today. They grew cereals for self-use on smaller areas; their main income came from pasturage. They grew kadarka vine on south-facing hillsides. Most of the men were soldiers on the Ottomans' side so they were free from taxes. Serbians did not fell forests that covered large proportion of the area at that time. Their religious center was placed to Grábóc where a monastery and a church were built to train monks and priests. In Alsónána, the former Serbian-Nána, their church stands even today. Number of Serbians gradually sunk paralell by the growth of the proportion of the German population. The last groups of Serbians left Hungary in the 1920s and choosed to move to the Serbian-Croatian-Slovenian Kingdom (today Serbia).

In the beginning of 18th century after the fall of the Ottoman power few people lived in the research area. Old or new landowners did not have bondsmen so they had to send recruiters to foreign areas, to the middle part of Germany, to drum up settlers. From the 1740s number of free German settlers gradually grew whith whom landlords contracted about

conditions of settling down. In the new home they had to face a hard life. According to an old German saying the first generation died (Tod), the second was poverty-stricken (Not) and only the third could get bread (Brot). Germans started to fell the brushwood and the forest in groups or by family and so made land possible for agricultural cultivation. Firstly they lived in pit houses later ordinary houses and sheds were built.

Germans needed experince of generations and knowledge obtained by hard work to finish usage of fallow lands and to utilize the total arable land by development of animal breeding, stalling, fertilization and growing of fodder-plants. After the abolition of serfdom division of cropland and so the field structure of villages became steady. Arabel land stood of square-shaped parcels in a geometrical order. This order most probably nowhere in the country was so uniform as in the Southeastern-Völgység as here were no landowner who would have larger land property than 50 hectares and larger parcel in one piece than 5 hectares.

Inhabitants of the past Völgység-district adapted well to measures that influenced and altered conditions of agricultural production fundamentally. After 1851 when tobacco growing became a royal monopoly, Europe-wide famous tobacco products of the Völgység-district turned loss-making and so closed down. Deficiency of income was made up by keeping of the improved Bonyhádi cattle variety (a special variety of the Hungarian Simmental cattle species) and vine growing.

Settlers cultivated vine from the start. Firstly sun-exposed but steep slopes, suitable only for hoeing-cultivation, were planted in with kadarka vine, later also with other sorts. After the great filoxera-epidemy farmers learned to spray against peronospora ad to plant resistant vine grafts. In fall vine-stocks were covered against frost, in spring vineyards were fertilized as required (in the steepest places manure was carried up by women in baskets on their heads), stocks were uncovered, pruned, tied up and if fuits were not destroyed by hailstorm, in fall grape was harvested.

As a result of more decades-long hoeing-cultivation at the upper end of vineyards loess-gradients (in German: Rick) were formed where bushes grew. Ricks were cut down every 5-6 years and the twigs were used for heating ovens. At the bottom of Ricks there were holes of foxes and other animals and in the bushes several various birds lived. As it was not possible to even Ricks and so make them usable for cultivation they became valuable habitats and landmarks of landuse.

Intensive meadow- and pasture-management is perquisite for intensive landuse. It is impossible to keep strong horses, available for cultivating steep slopes, and good milker cows without enough good quality hay and grass. From the mid-19th century in the area both pasture-management and cattle keeping and so dairy was very developed.

After domestication robinia wood was used for heating. In those villages where there were no forests owned by the landlord, communal forests were planted. Trees were fell one-by-one. Forests in villages close to the Mecsek-hills like Ófalu, Bátaapáti and Mórágy, made a very pleasant local climate but they left very little cropland. Because of this, inhabitants of these villages, mostly past-cottars – besides cultivating their small fileds – became potters or carpenters in domestic industry scale.

Villeins owning a full or a half allotment after their liberation or leaving of tobacco cultivation changed to the more intensive vine-growing and stalled cattle breeding, so they built large stalls and hay-sheds. In this aspect (existence and proportions of farm-bildings) there is a definite difference between farmers owning land and those owning no land. Structure of building sites mirrors well circumstances of cattle stalling and such the land use. Characteristic rows of cellars and wine-press houses caved into loess-walls are memories of viniculture and wine making.

Almost all villages of the Southeastern-Völgység were built in valleys protected from extremities of weather. Living houses faced south with their long-side, rooms were protected from direct sunshine by wide eaves. Wide rammed earth walls were built on Mórágy-granite stone base. Ceilings were made by a beams-and-joints-technology called „Wicklholz", which was plastered over with dirt. As consequence of materials, structures and building technology of the same kind houses, street- and village sights were uniform and harmonic. Buildings in the eight villages and in the inhabited places of the Southeastern-Völgység are close relatives of each other. The oldest "members" of the "family"are two houses, one in Zsibrik and another in Ófalu. The house in Zsibrik dates back to the time of the 18th century settling and is built with original fachwerk-structure, while the house in Ófalu is jounger and preserved the memory of fachwerk-structure only in its proportions.

Economic crisis in the 1920s-1930s had a deep effect also in Völgység: agricultural products had no worth. In the 1930s German foreigners appeared in the area and tried to persuade inhabitants to take a liking to Hitler and his ideas. In 1941 – when it seemed Hitler will win the war – on sheets of the national census one had to declare about one's mother tongue and nationality. Most of the German speaking population of Hungary – listening to agitators of the Volksbund – declared both German language and German nationality.

There were few exceptions like members of the Bonyhád based "Faithful to the Homeland" movement who declared German mother tongue but Hungarian nationality as they felt to be part of the Hungarian nation. Volksbund promised to its members that after winning the war members of the "Faithful" movement will be deported to Ukraina and their property will be given to Volksbund-members. Leaders of the "Faithful" movement were deported by Gestapo while Volksbund-leaders left Hungary willingly before the end of the war. Population of German nationality was relocated outside Hungary after the war.

After the join of Bácska and a part of Bánság to Hungary, according to the land reform order, Széklers of Bukovina were brought away from Bukovina and were settled down here. In fall of 1944 as Soviet troops approached Széklers, fearing Serbian revenge, packed things up that had room on their coaches and headed to north. After a long rambling in Transdanubian, exhausted and desperate wanderers were settled down in spring of 1945 in German villages of Völgység. The new environment with its steep hills and the German speaking people was strange for Széklers, they felt enemies either in the hills or in the people. Old inhabitants found the newcomers strange. For some years after WWII in the Southeastern-Völgység life of old and new population turned very different and so formation of the landscape as well.

German army decimated livestock of the area and the Soviet army took away what was left so in fall 1945 the necessary agricultural works could not be done. By the next fall chaos reigned. Both old and new inhabitants aimed at sowing only that many cereals that was enough to live on. Széklers were settled down in three villages of the research area in four other ones miners, day-labourers and papupers came from various places while Ófalu is an exception the German population was not relocated. Most of the new settlers formarly had not been engaged in agriculture, those who had been, were farmers on plains and could not manage to take over the land use on the steep hills. Most of vineyards remained uncultivated, partly because the new master – if there was any – was not skilled in viniculture, partly because he had rather made an effort to grow food products.

In winter of 1945 an order obliged those who declared themselves German nationality in census of 1941 to leave Hungary and move to Germany. As a consequence in spring of 1946 most of the German population of the research area was chased out of their homes and relocated to American zone of Germany. From spring of 1948 outcomes of a doubled population change altered former landscape of the Southeastern-Völgység. Wealthy Hungarians living in Csallóköz had to leave their homes by right of population change. They

were allowed to take their movable property with themselves, which was so ample that they could not be settled down in place of the mostly pauper Slovaks, who in turn left Hungary. Meanwhile the Communist Party, that gained force with unacceptable means, with help of the Peasant Party chased out of their homes those, mostly wealthy, German speaking people who declared themselves Hungarian nationality in 1941 ("Faithfuls") and settled down wealthy Hungarians from the Csallóköz in their houses. This cruel treatment by rising fear and uncertainty of existence – transmittingly – served realizability of the co-operative utopia. Thrown out "Faithful" members were moved to such empty villages, where formerly Volksbund-members lived and Hungarians from Csallóköz refused to go.

Bátaapáti in the Southeastern-Völgység for example was left by new settlers coming from various areas of Hungary because by their profession they were not in agriculture and so were not skilled in it. In another village, Zsibrik no one moved into houses of the relocated Germans so the settlement slowly died out, today it is joined to Mőcsény and only few people live there. Üveghuta (an inhabited place of Bátaapáti) – apart from its renovated church-tower – disappeared without any sign and together with it Dömörkapu and Dömörfalu also vanished. Palatinca and Kismórágy despite all negative processes live.

The consequences of the more-step population change fundamentally altered former land utilization. Mixed population of the villages was very far from getting used to the new circumstances. New inhabitants started cultivation of the given land based on "home" experiences when organizers arrived from the city who claimed that they were unsuccessful because of individual tries. Rootless and disappointed new inhabitants yielded to the pressure and formed more co-operative farms in each village. The co-operatives instead did not flourish as there were neither enough horses nor "common" hay for the cultivation of the hilly areas and steep croplands could not been cultivated with tractors.

After nearly twenty years of struggle on 1st January1969 a large co-operative called "The People of Völgység Co-operative Farm"was formed into former smaller village-co-operatives were merged (Alsónána, Szálka and Ófalu although belonged to other co-operatives). At its foundation the co-operative used out of 10000 availabele hectares only 4600 hectares, out of which 2500 ha were cropland, 1300 ha forest, 600 ha pasture, 110 ha vine plantation and 56 ha fishing pond. On such a large estate of a landlord a castle would have stand in the center, leaders of the co-operative however chose the former bull-stall in Mőcsény (after necessary inner alterations). The smallest village in the area became the center because of its central location.

When in the end of the 1970s co-operatives were joined into specialized crop-production-systems, leaders of the county claimed area of "The People of Völgység" was not suitable for this measure. In the end the co-operative became member of a grain-production-system by higher party order. The co-op was qualified although into class of „unfavourable features" and so received reasonable state support for grain production, despite this used cropland was only 1000-1200 ha.

According to experiences of agricultural experts of the period despite every higher orders area of the Southeastern-Völgység is not suitable for large scale production of cereals. Animal husbandry remained as a possible option so in Cikó a works of 580 cows, in Grábóc stall for female-heifer, in Bátaapáti stall for young-heifer, in Mőcsény a fattening works of 400 bulls and in Kismórágy sheepcot was built.

In the 1980s 450 employers were on the paying list of the co-operative. Most probably before WWII for example in Cikó or Mórágy more animal was kept and (without artificial fertilization) nearly the same amount of cereals was grown than in the five villages of the "People of Völgység Co-operative" altogether. From 1989 values and equipment of the co-operative gradually shifted to use and ownership of outsiders and the co-operative finally closed down. In the Southeastern-Völgység totally different ownership- and land use structure

was formed in 1969 with the merge of co-operatives compared to the case before relocation of the German population. After the Compensation only ownership changed entirely not land use. For those who whished to earn a living from agriculture there was no way back to small-parcel horse-drawn cultivation existent before WWII. Landscape structure remained unchanged as it was transformed in the 1960s-1970s.

If we travel through the area one can see villages live, inhabitants pay attention to keeping their property in good condition. This is especially true in Szálka, where the look of the settlement was improved eminently by the intellectual who live in the village and work elsewhere. In the present economic and property environment only few inhabitants found a living locally, half-threequarters of the population goes to work further. Living function of villages is much stressed but in Alsónána, Ófalu and Szálka and newly in Bátaapáti recreation is also important. Favourable natural features of the area create an ideal environment for the living function as well as further strengthening of the recreation function.

To keep the area fit for life in the future it is most important that villages keep their inhabitants. In this aspect it is very promising that leaders of Bátaapáti, Mőcsény and Cikó make great efforts to keep in place active people of the local society with the help of various advantages and grants.

5.2 Theses

I had three objectives in my research:

1. exploring history of landscape alteration of the Southeastern-Völgység from 18th century until today,
2. support of landscape history with on-site empirical data, and
3. statement of features of landscape alteration.

I reached all of the three goals. I covered up and showed landscape change history of Southeastern-Völgység in detail from 18th century until today with the help of primary and secondary resources. During the research I put great stress on fulfilling on-site data collection, evaluation and grouping of information and most possible complete documentation. On-site empirical data, together with other material, is published after the text in the annexes. Finally I defined landscape indicators with help of which I described features of landscape change of Southeastern-Völgység in detail.

At last I stated in points the **new scientific results**:

1. German agricultural settlers arriving in 18th century to Southeastern-Völgység during 200 years created a land use suitable for the features of the terrain in order to earn a living. This land use materialized in geometric field system standing of a quarter-half hectares large squared croplands, vineyards and pastures that served nearly the same yield to everyone. In the given period this was the optimal method, optimal solution for horse-drawn cultivation of the hilly area and use of landscape potential. Out of yield of nearly 10000 hectares (26000 parcels) of agricultural land of the research area between 1881 and 1945 constantly nearly 10000 people lived in considerable welfare and in a strong symbiosis with the landscape.

In the Southeastern-Völgység hills optimum of yield of cereals, fodder-crops and intensive animal husbandry could be reached by horse-drawn cultivation.

2. Agriculturally used hills result optimal yield and welfare for population if information and experience gained through generations of farming is constantly progressed and "recycled", if improved plant and animal species and cultivation equipment become landscape characteristic and so function as essential elements of the landscape. Optimal land use, utilizing hilly landscape potential with yoke and stalled animal was a result of hundreds of years of cultivation. Usage of manure is the condition of intensive plant production, which is condition of intensive animal stalling.

Supporting capacity of Southeastern-Völgység was constantly progressed, which was a result of improved plant- and animal species created through hundreds of years of experience to bear characteristics of the given landscape by inhabitants.

3. Most settlements in the Southeastern-Völgység is situated in valleys and building sites a roads are separated onto the two valley sides in order to either utilize water or avoid floods. Villages, which consist of U-shaped living and farm houses with favourable exposure, identical materials and structures that build up well-arranged, organic architectural aggregations, are indigenous in the landscape, are integral elements of it both in the aspect of terrain and climate. Scale of living houses give evidence of high standards of builders, while proportions of farm houses show that utilization of landscape potential with intensive cattle keeping demand large stalls and barns for winter storage of hay, forage and straw. Former cattle-stalling settlements can be identified by the scale of the farming buildings.

Settlements of the Southeastern-Völgység, lying along brooks in valleys, consisting of rows of separated building sites with large U-shaped courtyards walled with huge farming houses, are specific integral elements of the landscape.

4. If organic, of-one-substance belonging of a population, utilizing a high-yielding hilly landscape of special features with experiences of hundreds of years, breaks off with the landscape and to its place such a mixed population is settled, which comes from a significantly different environment, with other cultivation experiences, psychological and aesthetical affections, then the newcomers will feel strange and helpless in the foreign landscape. They cannot engage in using vineyards, steep hillsides, large barns and stalls so as a result leave them fallow and disregarded. Vineyards and steep croplands will be afforested, while bearing capacity of the landscape significantly and unavoidably decreases.

In the seven villages of Southeastern-Völgység between 1945 and 1962 vineyards decreased by 90%: from 505 hectares to 59 hectares, forest areas at the same period grew by 1465 hectares. In the eighth village, Ófalu, where the original inhabitants stayed, between 1945 and 1971 vine-covered areas changed only by 3 hectares (from 29 to 32 ha) and only between 1971 and 1984 decreased to 2 hectares. The area of forest, used to belong to the bishop, between 1895 and 1971 scarcely changed (grew from 232 to 258 hectares).

Inhabitants, coming without any or plainland agricultural skill, settling in place of the population that created a special landuse on the hills, altered landscape structure which was formed during centuries.

5. Servants of the economic-policy-delusion of the communist utopia in the 1950s stopped individual farms in order to substitute them with motorized factories. Most agricultural cropland in the Southeastern-Völgység is not suitable for machine cultivation because of features of the terrain. Landscape, every foothold of which was once used for plant growing, and its character had to change totally following the collectivist ideas. In place of the geometric patchwork of steep fields new forests, onto the marshy valley-bottoms detension lakes, onto the pastures ploughland species were planted. Economic, ecologic, aesthetical features of the landscape were altered irreversibly. The People of Völgység Co-operative Farm, formed in 1969, cultivated less than half of the 10000 hectare-area of settlements belonging to the co-operative. The co-operative grew cereals only on 1000 hectares and employed only 450 people. Individual farmers of Cikó or Mórágy – fourty years ago – kept more animal by settlements, grew more cereals and fed more people than the co-operative using area of five villages.

Co-operative farms stopped geometric surface structure of the hilly landscape in favour of machine-cultivation, as a failure yields dropped back to fraction of the previous.

6. Identical technical interventions modify socio-economic and rarely natural features of a given landscape, but affecting jointly they basically change aesthetical character and values of a landscape and psychic effects of these to the man. Sixty years ago geometrically structured order of quadrate field shapes defined image of landscape created by cultivation of team of horses; by now the once dominating network of strict shapes vanished for all from the hilly landscape.

Today sights of irregularly bordered grazing fields, fitting to the varying terrain, groves and picturesque groups of forests and lakes with dynamic coastlines parelell to the contour lines produce – instead of human proportions – the effect of dominant natural elements and shapes. Significantly altered ecological character of the landscape has a positive effect on psychic and physiological features.

Basic modification of land utilization produced fundamental change of original ecological, aesthetical features and order of values.

7. In the 18th century resettlement of the Southeastern-Völgység landlords moved settlers to valleys of such mediaeval villages inhabitants of which lived from agriculture and animal keeping. After the 20th-century-population-change, foundation and annullation of co-operative farms, by now millennium-long relation and interaction has broken off between population of villages and their environment, which formerly provided conditions of their existence. Symbiosis has broken off between natural and human components of the micro-region, population – apart from few exceptions – does not live from the landscape any more only lives in it. Inhabitants generally are not owners of the cropland, their existence depends not from the landscape, their emotions are not of the independent producer but that of the defenceless employee. New owners of machine cultivated large unified agricultural fields, amount of which decreased to tenth of the areas once cultivated by team of horses, make a living from the landscape but they do not live in the researched landscape. Appearance of villages with overwhelming living function – parallel with fading away of farm buildings and change of use of farming courtyards – signs detachment of population from the productive landscape dominated with natural elements, to live in artificial environment, in "residential-landscape". Posteriors of cottars, miners, day labourers and paupers arriving sixty years ago in hope of getting land received recompensation tickets but no horses, coaches, ploughs and cultivation knowledge. In most villages remained and new elderly got used to each other and youngsters like their homeland, take loving care for their houses and belongings.

In the Southeastern-Völgység millennium-long relation, symbiosis has breaken off between natural and human creating elements of the landscape; population of settlements turning into place for living does not live with the landscape only lives in it.

8. Bátaapáti, Szálka and Ófalu develops among the researched settlements. In the first two villages development is based on special natural features (nuclear waste deposit in Bátaapáti and the lake in Szálka) while in Ófalu the human element of the landscape gives bases of the development. In Alsónána, Cikó, Mórágy and Mőcsény pace of development is slower or in some cases stagnates: in the presen socio-economic environment in these settlements there are no new natural or human landscape potentials ready for utilization. Grábóc in the recent decades – since the closing of the old-age home, which meant the maintaining power in the settlement – lags behind.

In the future in the life of the inhabitants and settlements of the area no sudden change can be expected. Present development processes carry on and new developments can be expected in those villages where improvement is based on integral elements of the landscape, such as granit basement rock, lakes and active collaborating people.

6. Publications

Publications in reviews

- Changes of the Völgység waters. 4D No. 2, pp 49-53
- Landscape-history aspects of woodcraft in the Southeastern-Völgység from 18th century until today. 4D No. 15, pp 34-42
- Landscape change analysis in the Southeastern-Völgység based on aerial photographs. 4D No. 16, In press

Publications in conference proceedings

Hungarian full paper

- Features of landscape alteration in Southeastern-Völgység from 18th century until today. IV. Völgység Conference, 26th November 2005, Bonyhád, pp 109-131
- Change of forest cover of Hungarian landscapes. Tavaszi Szél Conference, 6th May 2006, Kaposvár, pp 69-72
- Change of Southeastern-Völgység landscape and settlements from Ottoman reign until today. VI. Settlement in the landscape Conference, 29th June 2006, Tokaj, pp 315-318

Hungarian abstract

- Changes of the Völgység waters. Lippay-Ormos-Vas Conference, 20th Oct 2005, Bp, p 68
- Connections of change of landscape character and land use. III. Hungarian Geographical Conference, 6-7th Sept 2006, Budapest, p 162
- Development possibilities in the Southeastern-Völgység. III. Hungarian Geographical Conference, 6-7th Sept 2006, Budapest, p 163
- Newest results of landscape change in the Southeastern-Völgység. Lippay-Ormos-Vas Conference, 8th November 2007, Budapest, p 82

English full paper

- Land use changes in Völgység, Hungary from 18th century. 5th International Conference of PhD Students, Section agriculture, 14-20th August 2005, Miskolc, pp 127-131
- The effects of land use changes to the soil in Völgység, Hungary from 18th century. IP Soil I. Responsible use of soil and land and regional development. Research programme of the Academia Danubiana, September 2005, Neusiedl am See, pp 31-33
- Changes of the landscape in Völgység, Hungary from 18th century. ECLAS Conference on Landscape change, 14-18th September 2005, Ankara, pp 98-103
- How much wilderness do we need?, IP Soil II. Responsible use of soil and land and regional development. Research programme of the Academia Danubiana, 19th March-2nd April 2006, Neusiedl am See, pp 32-35
- Changes in agricultural buildings in South-Tolna. V. Alföldi Scientific Landscape Management Days, 26th October 2006, Mezőtúr, p 61
- Effects of different agricultural background to the landscape. 6th International Conference of PhD Students, 12-18th August 2007, Miskolc, pp 53-57
- Changing of agricultural land use scales in Hungary form the 19th century. 6th International Conf. of PhD Students, 12-18th August 2007, Miskolc, pp 47-52

English abstract

- Changes of the Völgység waters. Lippay-Ormos-Vas Conference, 20th Oct 2005, Bp, p 69
- Changes in landscape architectural planning process. XII. International Student Conference on Environmental Protection, 6th July 2006, Mezőtúr, p 19,
- Newest results of landscape change research in Southeast-Völgység. Lippay-Ormos-Vas Conference, 8th November 2007, Budapest