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## Research of the local road network<sup>1</sup>

### ABSZTRAKT

A tanulmány arra tesz kísérletet, hogy egy kistáj példáján (Mecsekhát) keresztül, a *működésbeli, alaktani és történeti* szempontok alapján összefoglaló jelleggel bemutassa a községi úthálózat jellemzőit és vizsgálati lehetőségeit. A cikk további célja, hogy ráirányítsa a figyelmet a kérdéskör jelentőségére a történeti és földrajzi diszciplinák körében, különös tekintettel arra, hogy az úthálózat-vizsgálatok általában a főútvonalakra és a közúthálózatra koncentráltak. A vizsgálat alapját 18-20. századi kéziratos térképek, tájmorfológiai megfigyelések és néprajzi gyűjtések adják. A tanulmány négy községi úttípust különböztet meg és mutat be: a) gazdasági utakat, b) közlekedő utakat, c) dombháti utakat, d) országutakat, derékokat. A *működésbeli szempontok* alatt ismerteti az útirányok alakulásának sajátosságait, az úthasználat és –karbantartás jellemzőit, a csomópontok jelentőségét és az utak helyi terminológiáját. *Alaktani aspektusból* aktív és fosszilis úttípusokat különböztet meg és megismereti az utak bemélyülésének folyamatát. A tanulmány a *történeti szempontok* bemutatásakor konkrét, levéltári forrásokon és terepbejárásokon alapuló útrekonstrukciókat mutat be két-két szinkrón és diakrón példán keresztül.

*Kulcsszavak: úthálózat, táj, történeti-földrajz, környezettörténet, mélyutak, dűlőutak*

Several disciplines are dealing with the road and traffic analysis, from the point of view of this present study historical geography, archaeology, local history, the anthropogenic geomorphology, transport geography, landscape history deserve special attention.<sup>2</sup> All sciences regard roads as the tangible elements of communication and interaction and try to explore them, analyse them and show them in order to understand their function. Roads have messages for the present-day man. The structure, the

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<sup>2</sup> Road network studies concerning this region: ERDŐSI 1972; 1978; 1980; 1981; 1986; 1987; GLASER 1929; SZAKÁLY 1973; T. MÉREY 2007

hierarchy, the density and their changes can inform us about the structures and changes in society, economy and land use.

Despite their value of carrying information and being important for analysis, little is known of the local, intra-village and inter-village routes. This level of analysis is the local communication level as it is defined by Michael Aston, according to him agricultural roads or the ones leading to churches belong here.<sup>3</sup> This study is attempting to present the characteristics and research possibilities of the local road network, through the example of a small region based on *functional, morphological and historical* aspects. The study is based on manuscript maps from the 18-20<sup>th</sup> century, landscape morphological observations and ethnographic collections. I carried out my research in a small historical region in Southern Hungary called Mecsekhát (formerly belonged to Hegyhát district). This region is well suited to the road network research for two reasons:

1. The topography of the study area is very lively, the Tertiary and Quaternary surface rocks (loess, loose loam, sandy rocks) that cover most of the area erode so well, consequently the ongoing traffic usually caused strong or moderate linear erosion and formed ditches. These geographical features allow the remote sensing, map and field observation of the objects.
2. Until the 1960's the main mean of transportation was the cart. Most of the inhabitants here lived on agriculture and as an addition they pursued domestic industry and mining. Interviews conducted recently reveal the traditional (going back several centuries) road use features given that the quality of local agriculture and transport has maintained similar needs for road use for centuries. However, the railway and motorisation redrew this road network.

### THE DEVELOPMENT OF LOCAL ROADS, MODES OF TRANSPORT

The local roads have been created by the local communication, the road network has been established in accordance with local needs, based on the works (agricultural, industrial) carried out in the estates of the villages and on the traffic of the local villages. I regard all the roads as *local roads* which are used and maintained by the local residents (the village) and the users of the land in the outskirts area. This definition is the result of a focus shift which is needed in order to thoroughly explore the features of the peasant communication as well as the system of the local and agricultural communication roads. It's a 'bottom-up' approach, putting the local communities into the focus of the investigation. Ferenc Erdősi pointed out in his study on Somogy and Baranya historical roads that after the termination of feudalism in the second half of the 19<sup>th</sup> century legally (concerning ownership and control) there were two types of local roads: one was the "*községi közlekedési út*" ('local communication road' with traffic function) and the other one was the "*községi közdülő út*" ('local public field track' with agrarian function) and the authorities appointed the villages to be responsible for them (Erdősi 1980. pp. 305; 1986. pp. 400–403). Even today a significant part of the local road network is maintained by the villages, it does not belong to the public road network. Using the term 'local road' is appropriate because of the scale and focus shift of this research as well as the ownership aspects of the roads.

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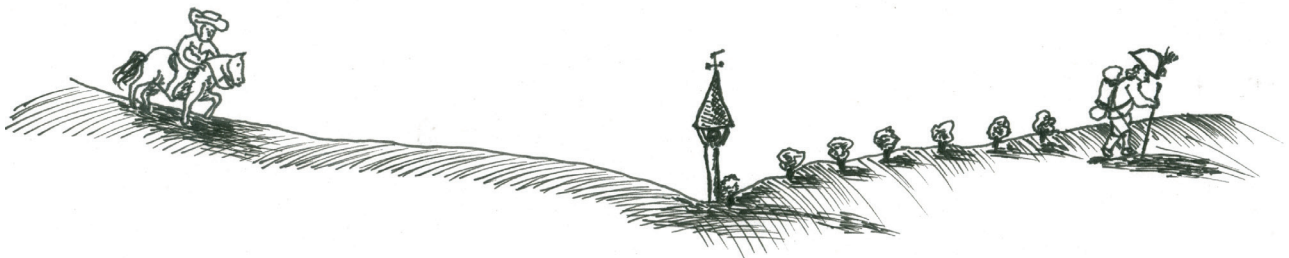
<sup>3</sup> Michael Aston distinguished four levels of road network studies based on the landscape: national, provincial, regional and local levels. ASTON 2002. pp. 143–145.

Roads belonging to the national road network or those where traffic is carried out between the great regions also appear in the study but these are not considered as roads of local interests.

Density and orientation of the local road network is largely dependent on the *economy* of the village, the *self-sufficiency degree*, *nature and intensity of the economic cooperation* between the villages (market or how far the market is), the *social and religious relations systems* (kinship, the parish seat etc.) between the villages, and the *external factors* (epidemics, wars, natural disasters) that could cause depopulation and migration. If we take into account all these factors we can see a road network which is highly flexible, easily adapted to the changes thus changeable and quite hierarchical at the same time.

Most of the existing routes today were created by the communication on foot, on horse (subordinately on donkey or on a mule to carry loads) and animal drawn vehicles (Figure 1). In forming a route and a track the teams of horses (or oxen, or cows) played the most important role. In the 18-19<sup>th</sup> century, the main animal for ploughing and drawing was the ox, which was replaced by the horse in the 19-20<sup>th</sup> century (Picture 1–2).

Figure 1: Illustration of a horseman, a walker and a belfry in the centre of Okorvölgy in the map of Hetvehely, end of the 18th century (Pécs Chapter Archives, maps, Hetvehely/1.).



Drawn on the basis of the original figure: József Hervanek



Picture 1: Wheat harvest, Kárász (Baranya county).  
Author unknown. 1942.

*Owned by the author.*



Picture 2: János Nagy carrier, Mánfa (Baranya county).  
Photographed by László Mándoki, 1960.

Ethnographic Department of Janus Pannonius Museum,  
photo gallery 4.162

## ROAD TYPES, JUNCTIONS, ROAD USE AND MAINTENANCE (OPERATIONAL ASPECTS)

Being hierarchical was the feature not only of the national road networks, but of local roads as well in all ages; we can see this in the naming of roads, public words and geographical names too.<sup>4</sup> The most common word in the local dialect in the 18-20<sup>th</sup> century was the *út* (road) but the terms *kocsiút* (cart road) or *szekérút* (carriage road) were also in use, however they could spread only from the middle of the 19<sup>th</sup> century with the advent of alternative means of transport (train and car). Until the appearance of surfaced roads the main road was the *országút* (*highway*), or *derék*, which was important in the regional transport between towns.<sup>5</sup> Roads for foot traffic were called *gyalogút* (footpath) or *ösvény* (path) while roads where animals were driven were called *csapás* (tracks). In Mecsekhát deeper parts of the road where the track cut deep into the ground and bedrock were called *horgos* or *horhos* (holloway) (in Southern Baranya it was *szurdok*). Based on how much they were used roads were distinguished as abandoned *pusztaút*, *pusztahorgos* and the ones being in use as *járt*, *jártas* roads. The quality of road was often suggested by adjectives attached to their names for example *kövesút* (rocky road – covered with rocks/rubbles), *műút* (paved road – with asphalt cover), but most of the roads are still *földút* (dirt road). Another linguistic invention (from the late 19<sup>th</sup> century) is the names of *dűlőút* (country lane) and *mezei út* (field path), both became used nationwide by the authorities during the procedure of land registry. These names due to their widespread prevalence in scientific language can be used as *synonyms of field tracks*.

Geographical naming requires a much more diverse study, where there are many variable factors and usually the naming of routes, destinations and lanes is the most important one. Names of the roads leading to the neighbouring village are very persistent and they are mostly named after the *adjacent village*, while those that lead to further, more prestigious places (market places, religious centres) often have more than one names. As during the Ottoman rule (1544-1686) several settlements were destroyed in this area, it is common for roads to bear the *name of the destroyed village*.<sup>6</sup> Road names, however, can alter not only according to the destination but the sections within a village. Often, the road is called differently in the neighbouring field or lane, which may be related to the physical characteristics of the land surface or a change in the name of the lane. The name change is especially relevant when the road reaches the territory of another village. A number of local road names can be accepted. This is due to variations of the name flexibly conforming to the purpose of transport or the speech situations. In the naming process, of course, some other factors may occur (economic, sacral etc.), which this writing does not deal with. In Mecsekhát the most common is the *vásárosút* (market road) leading to the neighbouring market centres; in villages having no parish *miseút* or *misés út* (mass road) is quite common; from an economic point of view probably the most widespread is the *malomút* (mill road). It is striking, however that names referring to other economic roles (mining,

<sup>4</sup> PESTI J. 2008; BMFN I. 1982. Also according to my own research carried out in the villages of Kárász, Magyaregregy, Szászvár and Vékény.

<sup>5</sup> The word 'derék' was a dialectal word in Baranya county, for its origin see: MÁTÉ G. 2013. 85.

<sup>6</sup> While the Hungarian army was defeated by the Turks in 1526 (at the battle of Mohács), the occupation of the area took place in 1543-44. Examples for road named after a deserted village: *Bikádi road* in Kisvaszar, *Kispusztai road* in Nagyuhajmás, *Dárói road* in Kaposszekcső, etc. (BMFN I. 1982. pp. 150, 45, 92)

transport, etc.) found in great number in various written sources are of secondary importance in oral-ity (in common words and place names).<sup>7</sup> This is highlighting the fact that written sources sometimes do not record the local names but focus on the economic aspects which are important for the author of the source and this is reflected in the naming.

Figure 2: Local communication network at the northern part of Mecsekhát in the beginning of the 20<sup>th</sup> century

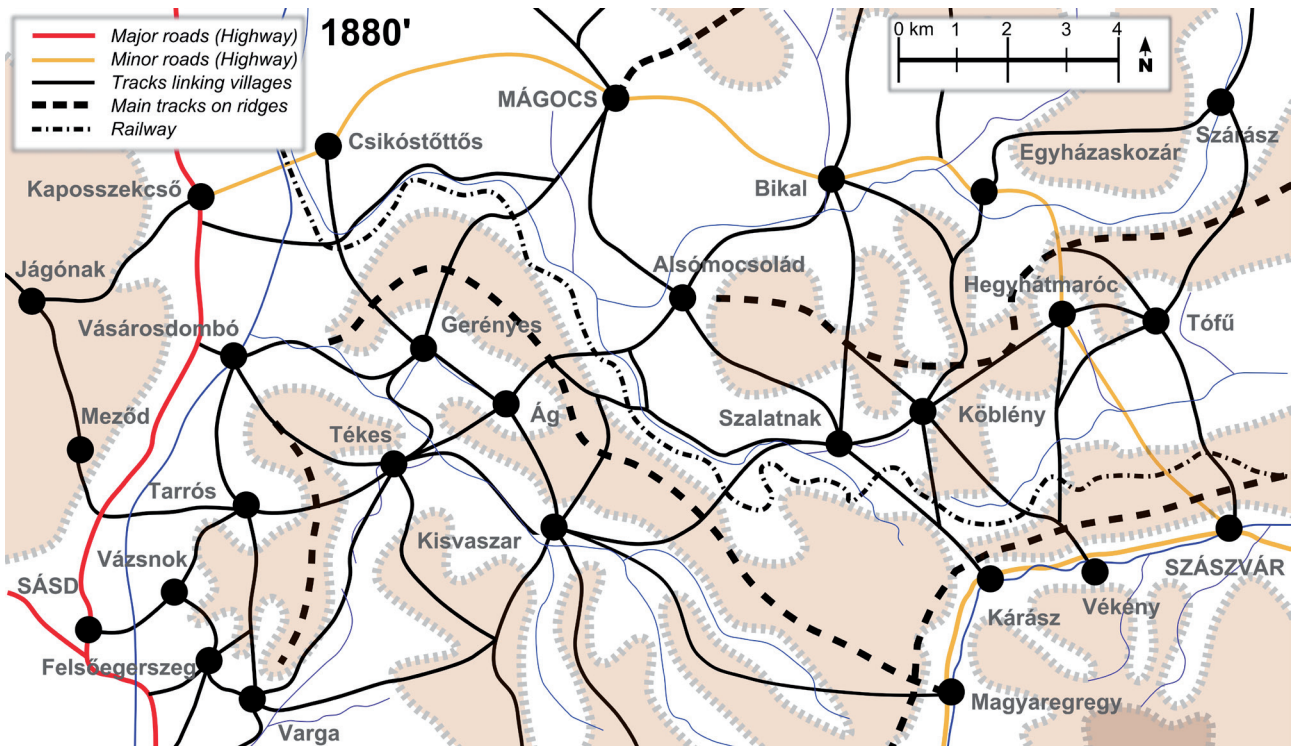


Illustration: Gábor Máté

According to the operational (functional) characteristics of local roads they can be divided into four types (Figure 2).

A) *Field tracks linking the communities with their farmlands.* They provide the biggest part of the set of roads in a village, at the significant changes in land use (enclosure, reparation, deforestation, etc) they can easily disappear and reoccur again.

B) *Communication roads connecting neighbouring villages.* These are the most important and best preserved elements in local road networks. Their layout is long lasting, they might disappear or change direction when settlement structures are changing or revolutionarily new vehicles appear. In the area Mecsekhát all the neighbouring villages had a direct connection until the 1950s, so a village was accessible from the neighbouring village without any detour. This road type is characterized by the trace with the shortest and/or smallest elevation.

Connecting roads between villages are moving radially from the centre of the village, opening in a fan-shaped or stellar formation.<sup>8</sup> In the estate map of Mágocs (Figure 3) made in the 1790s, we can observe this characteristic fan-shaped road network providing quick access to all the neighbouring villages.

<sup>7</sup> A very recent work demonstrating the variety of names appearing in charters: SZILÁGYI M. 2012. pp. 34–118.

<sup>8</sup> Michael Aston is presenting a similar star-shape formation (2002. 146-147.) around Ilchester (South-East Somerset)

Figure 3: Communication routes of Mágocs in a manorial map from the 1790s.

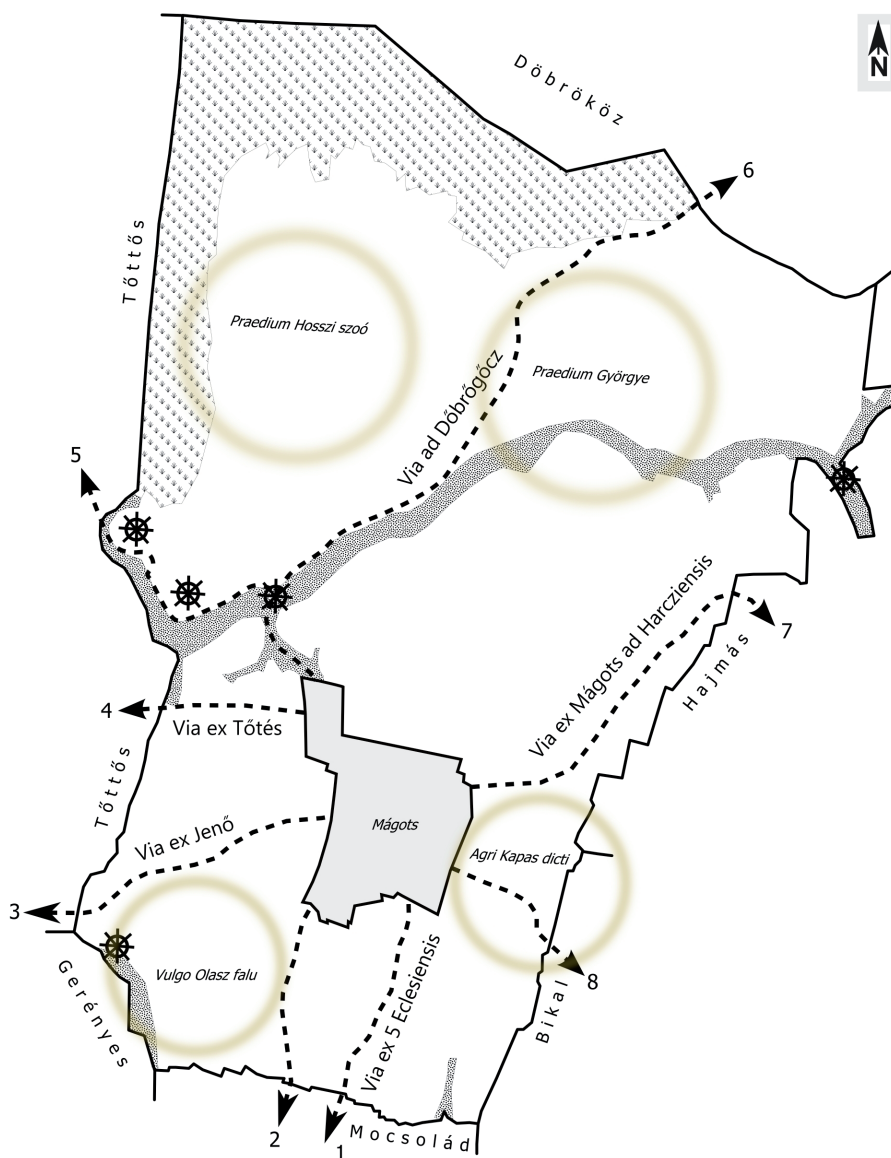


Illustration: Gábor Máté

BML XV. 3. e. Baranya county map collection, Manorial maps. Pécsváradi Közalapítványi Kerület (Public Foundation District in Pécsvárad)

From the settlement (1) Pécs road (*Via Secclesiense ecclesiensis*) is heading south, leading to the largest city in South Transdanubia, and to the adjacent village of *Alsómocsolád*. The road running westerly parallel to this one (2) is leading to Hábi-valley and *Gerényes* via the boundary areas of the ruined *Olaszfalu* and *Varjas*. The end point of the route running south-west (3) on the map was *Baranyajenő*, a distant village which belonged to the manor; this road however passed through the area of *Háb* which was destroyed during the Ottoman occupation and it also crossed the main highway of this region. There is another trace very close (4), which was heading west to the neighbouring *Csikóstöttös*. One could get to the floodplain of the river *Kapos* and to the neighbouring settlement of *Dombóvár* in the north-west direction (5) and to *Döbrököz* via a village destroyed in the Ottoman occupation (*Györgyi*) northward (6). Heading north-east, along the hilltop (7) an important ridge route was leading to *Hajmás* and was terminating in the estate village called *Harc*. The road eastward

(8) was crossing a deserted village called *Kapás* and led to *Bikal* while passing the medieval mill sites here. The overview shows that from the village of *Mágocs* there were roads to all the neighbouring villages. Most of them can date back (at least) to the Middle Ages, which is indicated by the fact that they run toward the neighbouring villages via the territories of those medieval villages that were destroyed during the Ottoman rule (1544-1686) passing by their surviving mill sites and church ruins.

C) *Hilltop roads (ridge routes) connecting more distant settlements without passing villages.* Due to the geographic structure of this region the quickest way of travelling was on the hilltops. The roads called *hátút* or *hegyháti út* running along the ridges were the most important elements of communication in the intra region relations. Sections of ridge routes might serve as access to nearby settlements.

D) *Highways, derék-s between the counties and different parts of the country.*

*Derék-s* follow the busiest local roads, which are the backbone of the modern road network (main roads, secondary roads) and partly follow their track. *Derék-s* are running along the edge of the valleys and at the foot of the hills. They also had an important military role. The Pécs – Magyarszék – Sásd road was a significant route even in Roman times (MÓCSY A. – FITZ. J. 1990. pp. 122–123).

The course of the roads is determined by the topography of the land. Junctions or centres are created in good and energetic locations. Hogbacks and narrows are typical junction points, and in larger stream valleys several roads can meet by a ford. Besides the junctions we can have crossings and road forks (four or five roads meet three). In Figure 4 the 250-meter-high hogback accommodates four tracks coming from the south. *Kárász's* (K) oldest routes with the largest traffic are *Ráchorgos* (a) and *Nagyhorgos* (b) that became holloways over the centuries. To replace *Nagyhorgos* the so called *New road* was built in the 1930's leading to the train station with paved surface (c). A horse-drawn industrial railway line (d) was introduced and joined to the hogback in the 1920s. The serpentine built in the 20th century (c, d) show the changes of needs concerning roads for transport.

Figure 4: Local roads leading to Nagypart-tető in Kárász.

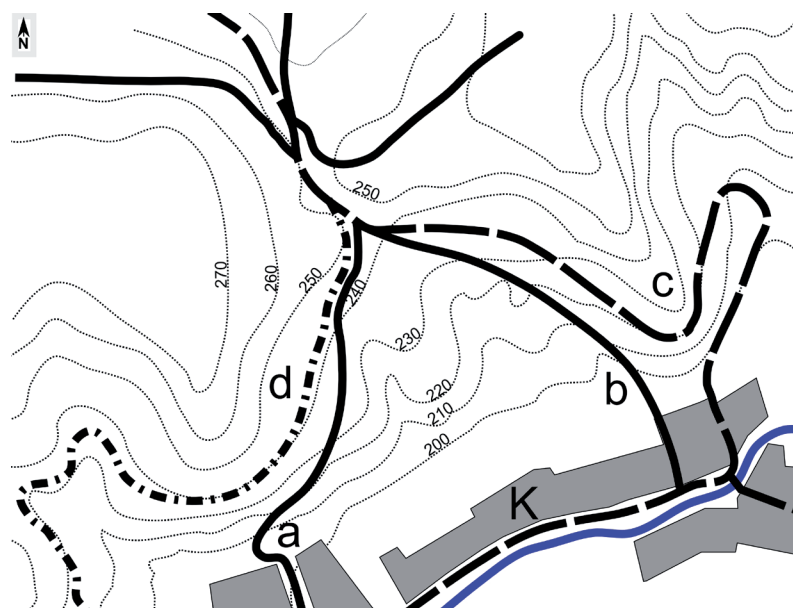


Illustration: Gábor Máté

Figure 5: Almás wayhouse and the roads leading to it.

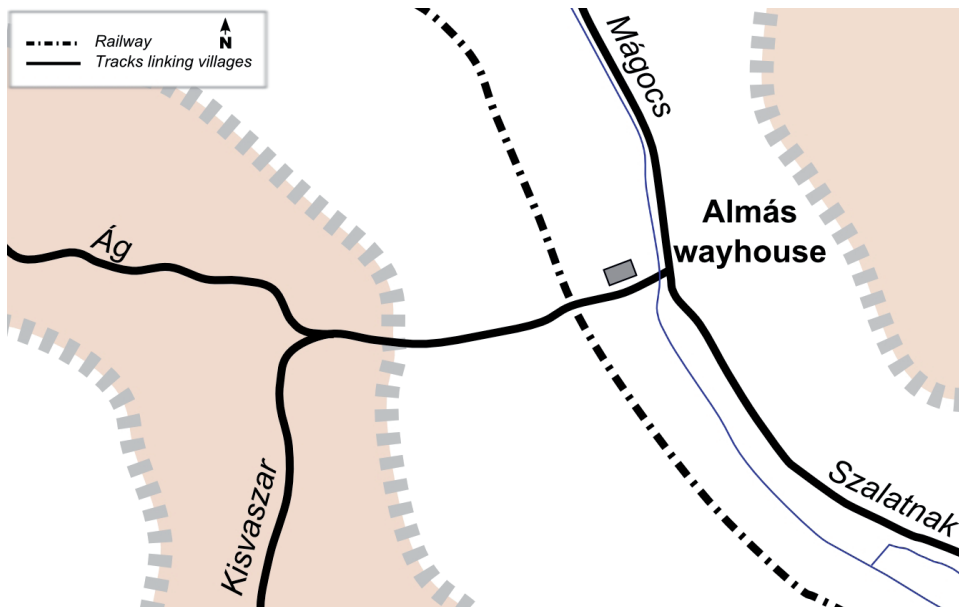


Illustration: Gábor Máté

Next to the junctions there are often buildings serving the traffic (inn, boarding house, water well) or smaller buildings with sacred functions (chapel, cross, bell tower) (Figure 5).

Figure 6: Junction on Hilja hill located at the borders of Szalatnak, Köblény and Bikal.

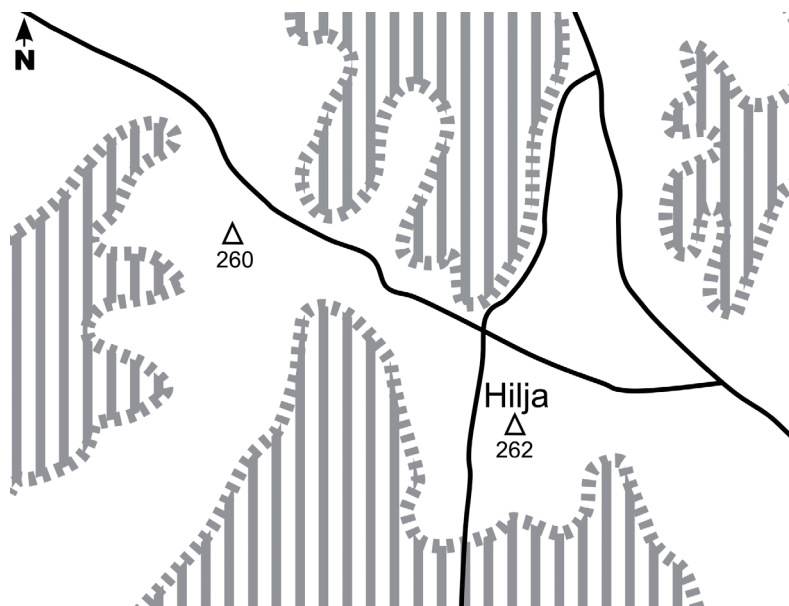


Illustration: Gábor Máté

In the region certain key position tops had an important transport role as well where usually cross roads (sometimes marked with a cross or holy pictures) can be found (Figure 6). Of course, the most important junctions are located near the economic premises where the spatial activity is greater.

The use of routeways and tracks can be influenced by the climate, especially precipitation and evaporation. Ridge routes on the hilltops were always in the best and the driest state, while valley roads were very unsuitable for traffic in wet weather. The direction was chosen empirically based on the purpose of communication, the weather and the size of the load.

On the hilltops, sometimes more and even parallel tracks and holloways were formed being used at the same time. In case of some holloways certain customary traffic laws emerged based on public consensus. One track was used only for going up with empty carts, while on the other people travelled downward with loads (Figure 7). On other roads bypasses were made where the carts could keep off (Figure 8). As approaching the holloway people whistled or shouted so other ones in the ‘horgos’ could hear them coming. In the steeper sections roads erode more quickly therefore more active and inactive tracks can be formed (Figure 9). Excellent examples of this phenomenon also known in the landscape morphological literature are the Káplányi-horgos or the Codolló-mountain in Kisvaszar (MUIR, R. 2000. pp. 95, 99; ASTON, M. 2002. pp. 141).

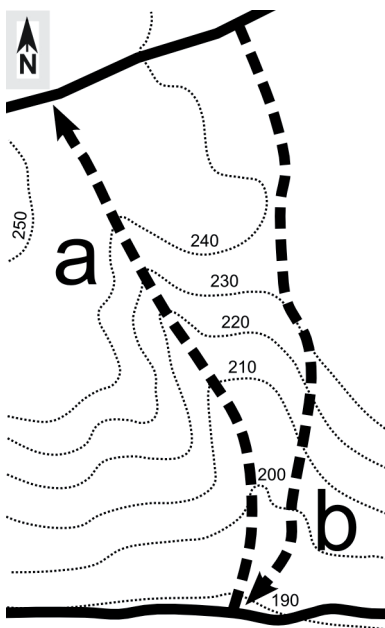


Figure 7: Outline of Teleki-horgos in Kárász. Upwards the Teleki valley (a), downwards the Teleki-horgos (b) were in use.

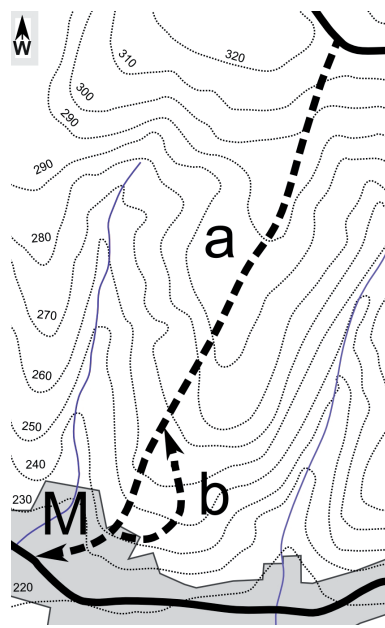


Figure 8: Outline of Borziki-horgos in Magyaregyregy. Hosszúhorgos (a) was used for up and downward traffic, Rövidhorgos (b) was used only upwards by-passing the steep part.

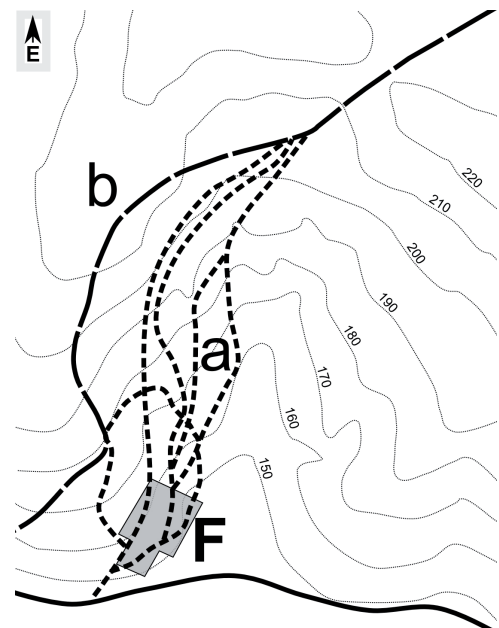


Figure 9: Alternative lines of the steep hillside of Codolló in Kisvaszar. Old routes (a) and a new (b) lane can be observed serving as a forest service road, near to the forestry (F)

In the 18-19th century there were only a few state and county maintained roads; scriptures about the county’s traffic conditions are talking about the bad road conditions in the 1840s which hindered the transportation of the products to the market and their sale in the long-distance trade (MÁTÉ G. 2013. pp. 89). Postal and trade routes were considered as main roads, their and their objects’ maintenance belonged to the county or certain manors and it was partly done with socage. Change occurred after the end of feudalism (in 1848), when state and country participation became stronger in the maintenance of the roads. The railway network was built at that time too. The local roads were still maintained and economically controlled by the local communities in the 18-19<sup>th</sup> century and in the 1940s as well. Keeping the roads in good condition was their interest, because during transportation humans, animals, carts and the loads could all be damaged. The local roads were looked after by the owners of the village. They used hoe and plough to flatten the roads; repairing took place annually mainly before the time of wheat-harvest and the *judge* was responsible for selecting the date for this.

Every house sent one person to participate in this work. At that time they usually adjusted the bottom of the holloways. The small jobs after thunderstorms and snowmelt (draining puddles, cutting fallen trees, removing rocks) were done by the *ranger*, or a farmer passing by.

### FACTORS AFFECTING THE CHARACTER OF THE ROAD (MORPHOLOGICAL CRITERIA)

The field recognition of the roads is made possible by the deepening of the track. According to Dietrich Denecke the forming of holloways have the following natural factors: slope angle, soil, bedrock and vegetation.<sup>9</sup> Ferenc Erdősi did his research in the Mecsek hill and its environment where he distinguished active and fossil holloways (cart roads), regarding their characters he divided them into four categories. When setting up categories he was focusing on the steepness of the slopes and the length, depth and the course of the holloways (ERDŐSI F. 1987. pp. 113).

In light of my research done in Mecsekhát six groups of factors influence the character of the road:

- type of soil and bedrock,
- slope conditions and the extent of sheet wash,
- climatic conditions (microclimate),
- vegetation,
- the nature, intensity and durability of road use,
- deployment.

The character of the road is formed by the interplay of these factors. In the following I am going to deal with the formation and development of the roads without going into detail concerning these factors. The slightest ruts can be found on roads with a moderate slope or no slope at all. They generally run along the ridges or in valleys. However, as the hilltops are not the same heights, on the ridge routes ruts and completely flat sections can be formed as well. Ridge roads today are usually covered with rubbles and flattened by machines so they look more artificial; on filed tracks the deepening is more and more intense due to the heavy farm machineries.

In the valleys accumulation is more typical, thus the track of the road is getting filled up and after a while the old traces are impossible to follow. In case of the valley roads it is possible to discover a route where the track is cut in the rock or if it runs along the bottom of the hills. Roads running on meadow soil and across groves have a little chance to be found. In the area of Mecsekhát there are more resistant rocks (limestone, dolomite, phonolite, basalt) so cart roads were not really deep here (ERDŐSI F. 1987. 111). In *Singödör* in Magyaregregy for tens of meters we can see the trace of a cart road running along the riverbed cut into the limestone (Picture 3). According to folk etymology the valley's name comes from the iron bit (*singvas*) of the cart wheel because the bad road always ruined it (REUTER C. 1961. pp. 378–379). The road is possibly much older because it is situated in the vicinity of a lost medieval village; it is at least of medieval origin.

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<sup>9</sup> Denecke is quoted: DÁVID – ILYÉS – BAROS 2006. 205

Picture 3: Cart road cut deep into the limestone in Singödör, Magyaregyregy.



Photographed by Gábor Máté, 2003.

The best and most characteristic forms can be traced on the hills. Roads can turn into holloways of various profiles by the impact of the traffic. Denecke named eight idealized road-profiles during the examination of holloways.<sup>10</sup> In Mecsekhat covered mainly with soft rock two active and two fossil forms are the most common: wheel rut, trapezoid-shaped and trough-shaped holloways and holloways turned into gullies.

In the first phase of the rut formation of cart roads only the *track* can be seen, which is not coming about only by one cart trace but by many ruts running parallel or towards each other.<sup>11</sup> Deepening of the horgos is the most intense when load transport is going on. In particular, carts with loads going downward cut and disintegrated the bottom of the horgos. The Hungarian word horgos originates from the world horol, which refers to the process of loosening the soil surface (TAKÁCS, L. 1980. pp. 240; MÁTÉ G. 2013. pp. 86). When descending the cartwheels were wrapped in chains or were put on

<sup>10</sup> Denecke is quoted: Dávid – Ilyés – Baros 2006. 205.

<sup>11</sup> Dobos – Ilyés – Baros 2006. 205. Similar formations were found at the archaeological excavation of the medieval town of Muhi. LASZLOVSKY J. – MIKLÓS ZS. – ROMHÁNYI B. – SZENDE K. 2003, pp. 370–371

a slider (Picture 4) thus the cart did not run, but slipped on the slope. On the very steep slopes more or all the four wheels might have been wrapped (MÁTÉ G. 2006). Older people with their experiences of communication still know the exact process of the formation of the holloways.

Picture 4: Slide from the collection of Nagybodolya country-house (Tájház) museum (South-Baranya, Podolje, HR)



If certain factors are present the deepening of the roads begins. Holloways being in use (active) have a kind of bottom which is usually trapezoidal in shape (Figure 10). This state (shape) is kept like that in the horgos by the communication and the process of flattening the ground. The bottom of the horgos is undergoing significant deformation after thunderstorms as the falling water enlarges the deeper wheel ruts in an asymmetric way. During road maintenance trace ruts are levelled, soil is put into the rut, or the whole bottom is planed down. Today, the bottom of the holloways is often reinforced by bricks, or rubbles or they can be paved as well. Cleaning the continuously falling stones and the overgrowing vegetation can be a problem. Many of the horgos-s used to have carts on them but now they are not suitable for motor vehicle traffic because of their steepness, so holloways in Mecsekhat were rarely converted into asphalt roads. Horgos-s with deep ruts sometimes carry their own geographic feature in their names (*Sötét-horhos* – Dark-holloway, *Világos-horhos* – Light-holloway), *Nagyhorgos* – Big-holloway, *Szurdok* – Canyon) (BMFN I. 1982. pp. 127, 130). One of the unique names of the holloways can be *Vaskapu* (Irongate) as well (MÁTÉ G. 2013. pp. 88).

Over time when a road is not in use the cross-section of the holloways (fossil) becomes U-shaped (Figure 11), or as the result of the process of rut formation it becomes V-shaped (Figure 12). In the first case rubbles falling from the bank walls and the growing vegetation over the horgos accumulate, depending on the light conditions shrubs or grasses appear, but the shape is still the reminiscent of its original function. The abandoned and less steep roads are often keeping their U-shaped cross-section; these relics can be researched best. When examining the roads we should pay attention to the vegetation at the edge of the road sprouted from the trunks, they are left there to protect the bank walls. Trunks lined up along the edge of the road form such a line where trees should be studied from dendrochronological and root exposure point of views (KÓRÓDY G. – KÁZMÉR M. – SZÉKELY B. 2009.).

Figure 10: Section of an active, asymmetrical holloway with crumbling walls and deep cut rut

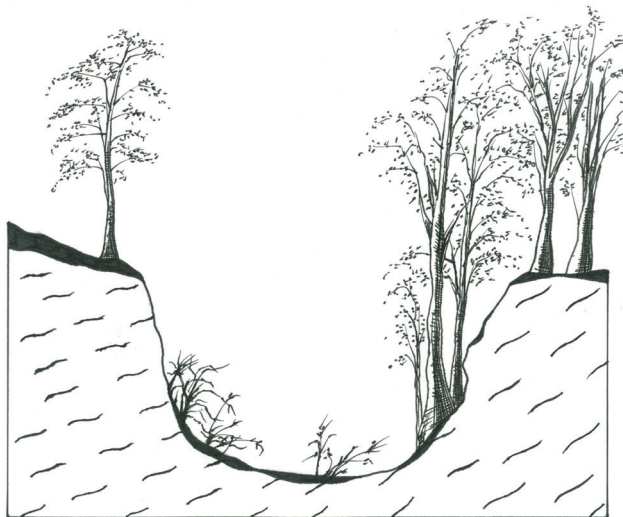
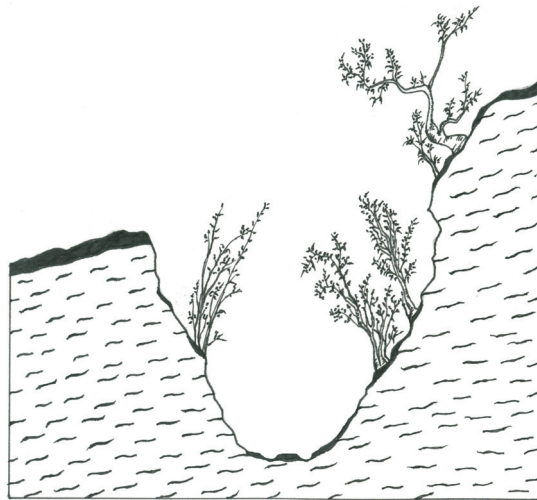


Figure 11: Section of a fossil, moderately banked holloway with a U-shaped cross-section well-preserving its relic form

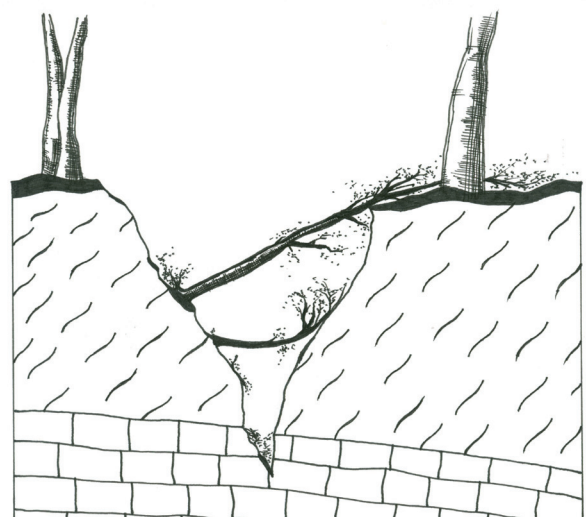


Figure 12: Section of a fossil holloway turned into an abyss with a V-shaped cross-section having lost its relic form. Illustration: József Hervanek

Holloways on steep sites are usually transformed into abysses. Ferenc Erdósi's research show that these abysses are sometimes so deep that they reach the aquifers and springs appear in their bottoms. The deepening process sometimes does not stop at the bottom of the layers of rock it may go on in the underlying – sometimes even harder – layers too (ERDÓSI F. 1987. pp. 114; ÁDÁM L. 1969). Roads with deep ruts that turned into gullies are difficult to reconstruct in the local road network, because they are difficult to distinguish from the erosion valleys, which are not due to human impact only (natural-anthropogenic forms). The former, less disintegrated holloways can be recognised by their course (depending on the steepness) they are less steep, and not perpendicular to the level lines and different from the slope-conditions (ERDÓSI, F. 1978). Active and fossil holloways are such characteristic elements of the road network that can contribute to the historic landscape research most.

### DIACHRONIC AND SYNCHRONOUS ROAD ANALYSIS (HISTORICAL ASPECTS)

When doing a historical road analysis we can use the aforementioned criteria in a complex way. The synchronous studies, that is the ones carried out in the same time period are typical of the environmental-archaeological settlement and historical-geographical research. There the archaeological excavation, or the available archival sources (perambulations, charters, estate lawsuits, travel books, manuscript maps) only allow to study one time dimension or time dimensions being so close to each other, tracing a track's changing process and its motive can not be done.<sup>12</sup> Analysis of changes is possible when there are more than one sources available about a road or road network from different eras, thus we can have a satisfying picture concerning the process of changes. The following examples from the Mecsekhát are showing synchronous and diachronic road and road network studies.

1. The map in Figure 13 shows the roads of an estate map from 1759 in Kercseliget. The results of the post-Ottoman economic, urban and social reorganization could be that *used*, *old* and *abandoned* tracks of communication roads appear on the landscape. The tracks are not easy to locate. With field observation we can identify the old road leading to Jenő (Antiqua), at some point (H) it goes up the hill. Since this road is not on the 19-20<sup>th</sup> century maps we can assume that after the first use of the new (moderna) track its importance declined or it was completely abandoned. Gullies localized at the edge of the hillside (Picture 5) once were the downward sections of the road. The picture of the northern gully shows the erosion of 200-250 years after the abandonment of the trace (with the depth of 11 meters and width of 8 meters). The road profile could be the subject of additional morphological studies because the abandonment is very well dated.

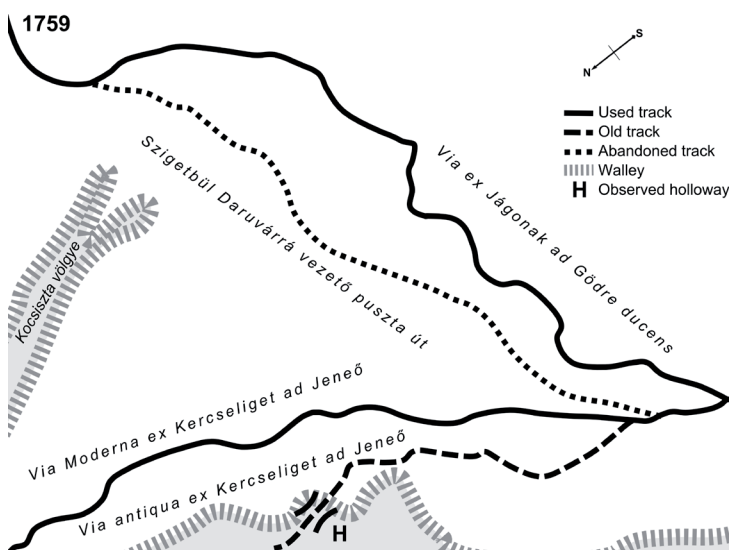


Figure 13: Roads at the estate of Kercseliget.  
Illustration: Gábor Máté



Picture 5: The supposed track of the old Kercseliget road today. Photographed by András K. Németh

2. There were perambulations revealing the boundary features in the valley at northern edge of Kárász in the 18<sup>th</sup> century (Figure 14). According to a document the salt trading route named 'Via Regia' ran in this valley where the salt was transported (saltway) from the Danube to Nagykanizsa (BORSY J. 2001. pp. 50). The road was already out of use in the 17-18<sup>th</sup> century for it is referred to

<sup>12</sup> Latest local archaeological publications containing methodological remarks and overviews on Hungarian road researches: STIBRÁNYI M. n. d.; 2008, SZILÁGYI M. 2012.

as an ‘old road’. Not only this road (where the perambulation took place), but the medieval villages in the valley, Bolda and Himesd were also destroyed during the Ottoman rule. Their exact location is unknown. In the perambulation many old and new roads are mentioned (like the example of Kercseliget), but these can not be located accurately because of the present uncertainty of the boundary features. We can assume however, that from the villages – similarly to the neighbouring village of Kárász – more roads were leading up to the hill in the south. On the north slope five well-developed V-shaped gorges can be found, which in their present forms do not resemble to lanes at all. The surface morphology and the all the data make it clear that there was a road or were roads here. On the easily decaying surface we can only see the traces of the new roads. According to the field research, it is likely that the old road between Kárász and Köblény mentioned in the perambulation was the Hársmai-valley (Picture 6).

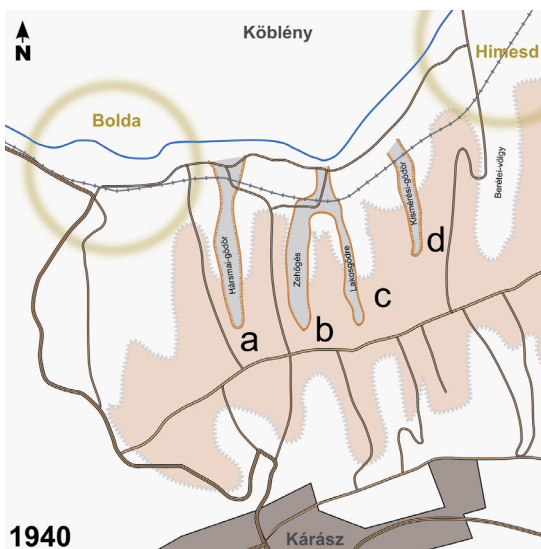


Figure 14: Outline of gullies in the north of Kárász. a) Hársma-pit, b) Zehögés, c) Lakosgödre, d) Kimérés-pit



Picture 6: Picture of Hársmai-gödör (Hársma-pit)

- Changes in the complete local road network of Kárász can be followed from the 1950s onwards because a wide range of topographical maps and aerial photos are available, and the routes not mentioned in the maps can be explored from the interviews with the local people. The map comparison shown here (Figure 15-16) presents the changes in the lane networks in 50 years. During this time, the road density was significantly reduced, hundreds of years old ridge routes were abandoned, field tracks leading to neighbouring villages were not used any more and the majority of the holloways become out of use too. This was due not only to motorization, but to the decrease of regional activity as well.<sup>13</sup>

<sup>13</sup> For its social aspects see: MÁTÉ 2006; 2012

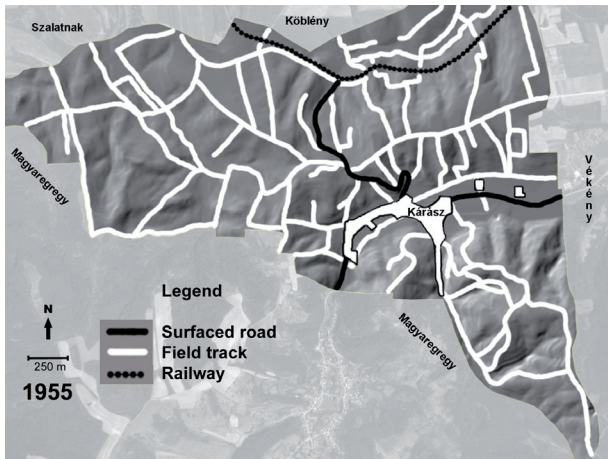


Figure 15: Road network in Kárász in 1955

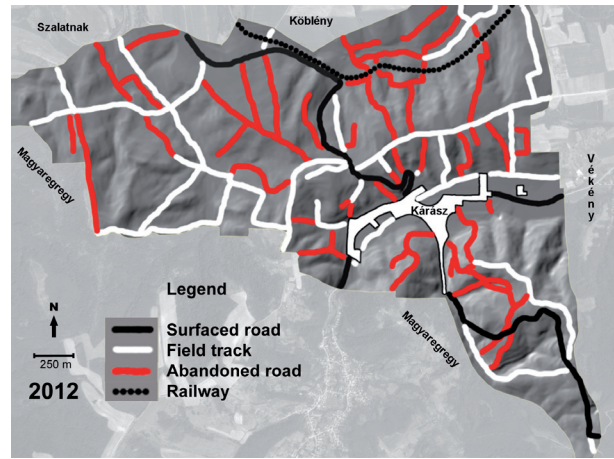
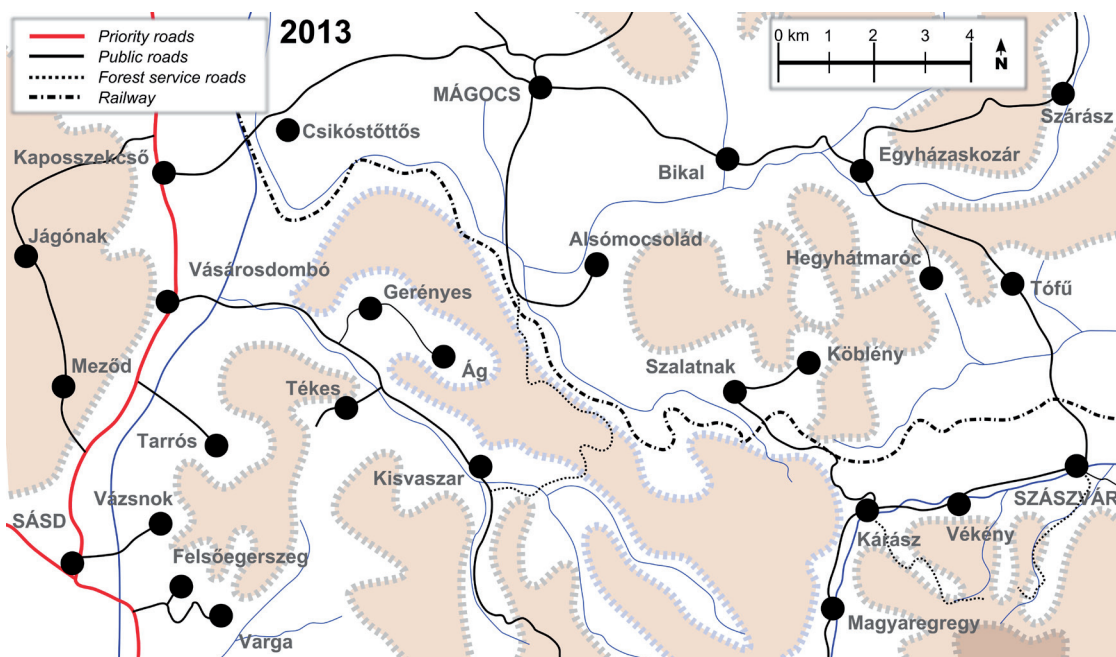


Figure 16: Road network in Kárász in 2012

4. The diachronic study can also be informative if we look at the changes of not only the field tracks of a village but the communication routes between villages (B) as well. Figure 17 presents the road network of this region today. Comparing it with Figure 2 we can observe that the former direct road links between villages became fewer in number, the neighbouring villages could be reached on access roads, sometimes with huge detours. The neighbouring villages located very close to each other became isolated because the motor traffic is quite limited on the field tracks (they are accessible only by jeep). The loss of connection can be traced in the case of former ridge routes as well (C). The road development in the region strengthened the peripheral features of certain settlements and isolated the communities having been connected to one another in all directions earlier. This spatial image and the orientation of public roads also shows that the local people no longer make their living from the estates of the village but they mostly work in towns; the intensity of economic and social relations between the villages is also reduced.<sup>14</sup>

Figure 17: Public road network of the studied region in 2013. Illustration: Gábor Máté



<sup>14</sup> In detail: Máté 2013. pp. 245–256.

These brief historical examples, as well as the functional and morphological review of the local roads aimed to demonstrate that besides the studies focusing on major routes in the country or the region, the local road network offers a lot of research opportunities especially for the historical disciplines. It can provide an outlook and an analogy for the historical and archaeological research and beyond that it also shows the local socio-economic transformation.

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