# DISSERTATIONES ARCHAEOLOGICAE

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# Transformation of settlement history in the Körös Region in the period between the Late Bronze Age and the end of Iron Age

Gergely Bóka

*Castle Headquaters*
*Integrated Developement Centre*

Boka.Gergely@varkapitanysag.hu

***Abstract***

*Abstract of PhD thesis submitted in 2020 to the Archaeology Doctoral Programme, Doctoral School of History, Eötvös Loránd University, Budapest under the supervision of Gábor V. Szabó.*

## Aims of dissertation

Studies and academic projects focusing on the changes of settlement history within the framework of Late Bronze Age and Iron Age investigations in the southeastern Great Hungarian Plain are fairly few in number. Apart from some recently exposed Late Bronze Age hillforts and fortified settlements, rarely were the spatial system of the so-called flat settlements of the Gáva culture, the Scythian Age Vekerzug culture and the Late Iron Age La Tène culture surveyed at regional and subregional-level in the past years. The research area comprises two larger geographical areas, the Hungarian Körös Region and the eastern portion of the Békés–Csanád Alluvial Fan (also known as the Maros Fan) *(Fig. 1)*. These ones are characterised by such advantages from a research aspect that enable further archaeological investigations:

- The research area covers the entire area (4000 km$^2$) of the former Hungarian Archaeological Topographical survey section of Békés county (1968–2000). Besides the districts of Szeghalom, Szarvas, Békéscsaba and Békés,[1] I had the opportunity to consult the already unpublished results obtained in Sarkad and Gyula districts.
- Numerous international archaeological projects investigated prehistoric settlements in the Körös Region applying modern and complex field methods (e.g., Körös Regional Archaeological Project – KRAP,[2] Bronze Age Körös Off-Tell Archaeology Project – BAKOTA[3]).
- Relevant microregional researches in the Gyomaendrőd district conducted by the Archaeological Institute of the Hungarian Academy of Sciences concerned settlements having belonged to the Gáva and Vekerzug cultures on more occasions, whose partial results were already published.[4]

1 Ecsedy et al. 1982; Jankovich et al. 1989; Jankovich et al. 1998.
2 Gyucha 2009; Gyucha 2015.
3 Duffy 2010; Duffy 2014.
4 Bökönyi 1992; Jerem 1996.


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- We had the opportunity to scrutinize settlement historical changes in two regions (Körös Region, Maros Fan) characterised by different geomorphological endowments.
- The aim of the Late Bronze Age and Iron Age Körös Region Archaeology (BIKA) project embracing the period between 2006 and 2020 was to reconstruct settlement archaeological transformations and environmental conditions by means of interdisciplinary researches.[5]

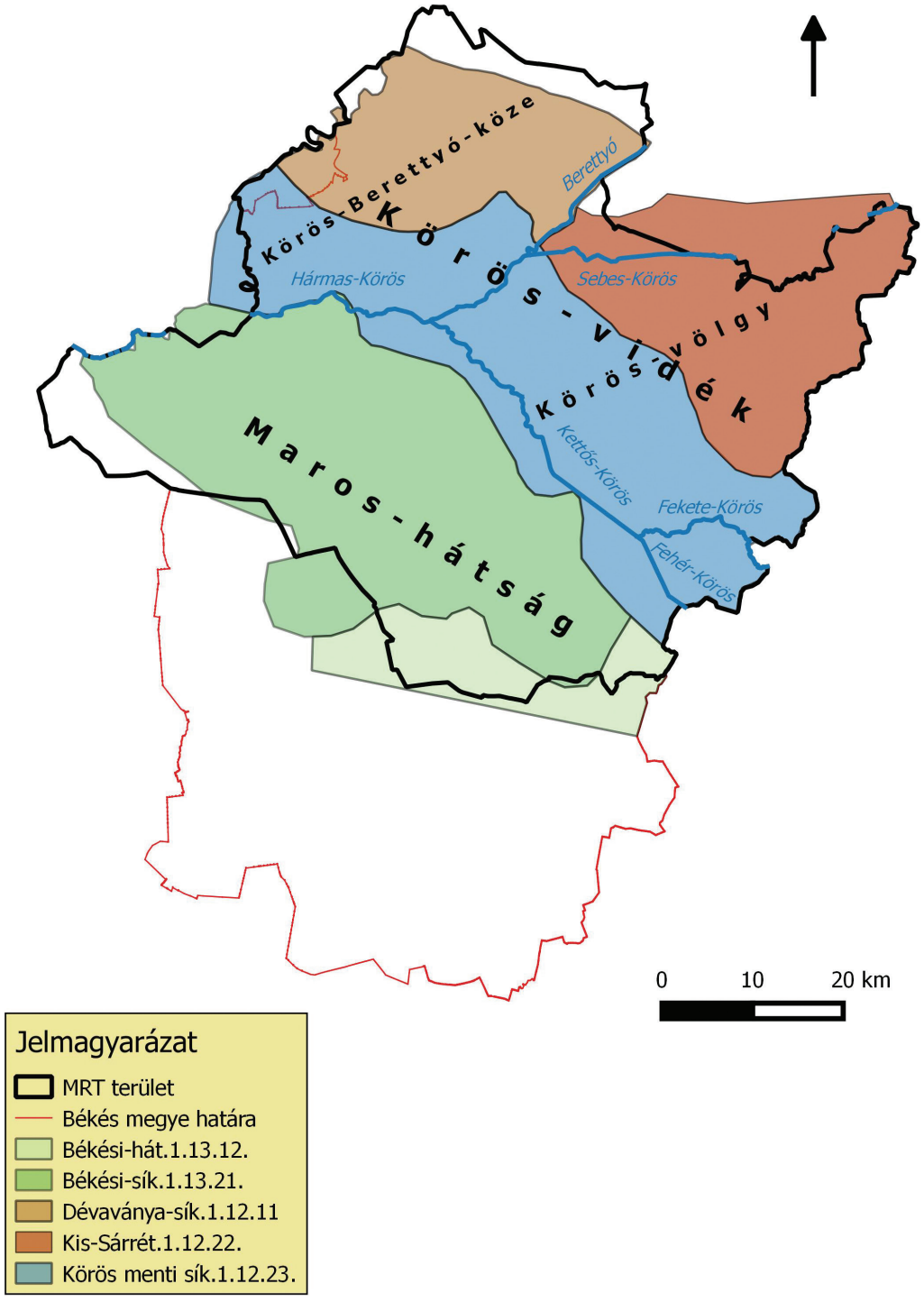


*Fig. 1.* The study area.

5 Bóka 2008a; Bóka 2008b; Bóka 2012; Bóka 2013; Bóka et al. 2017.

Changes of settlement history traced back from the second half of the Late Bronze Age until the end of the Iron Age bear witness to a particular economic, environmental and socio-historic development of the region.

The aim of this present dissertation is to provide explanation for the abovementioned changes to the greatest possible degree. It attempts to identify settling customs of the Gáva, Vekerzug and La Tène cultures by complementing the spatial informatic database launched upon the researches of the Archaeological Topography of Hungary (MRT) with complex field researches (systematic field surveys, geophysical surveys, aerial photograph analyses, searches by metal detector and test excavations) involving interdisciplinary investigations (archaeobotanical researches, radiocarbon dating) and applying paleoecological analyses.

## Results

### *Settlement systems*

Gáva culture's settlement structure can be identified with irregular linear shape, that of Vekerzug culture with irregular cluster shape and La Tène culture with the linear cluster shape. Gáva culture's main habitation area of Gáva culture was the Körös Region, similarly to the preceding eras. The Maros Fan can be considered a secondary habitation zone in this sense. Data on settlement density mark smaller clusters of local settlements, however the typical settlement system of the entire region is dominantly characterized by the fact that human habitats are located in a linear pattern and along greater watercourses (rivers, streams) active in the Holocene *(Fig. 2)*. Sites marking settlements of significant intensity could have fulfilled leading and organising role within the framework of the linear structural units of settlement system. These core settlements (43 altogether) seem to have been established on the basis of a well-structured and planned settling strategy. The centres were situated along a regular linear pattern ca. 3600 metres from one another, and could have possessed circular areas of a diameter of 2–3 kms. Large, intensive flat sites typical of riparian areas (e.g., at Baks and Poroszló) are unknown from our research area. This central and leading position could probably have been held by the fortification identified at Sarkad-Vár-tábla site at the onetime Fekete Körös riverbank and by its outskirt, Doboz-Kékfű site having been dated to HA2–HB2/HB3 periods.

Late Bronze Age linear-shaped settlement system identified in the Körös Region and the Kondoros Valley had not developed in the territory of the fortified earthwork at Újkígyós, but instead a central, clustered structure, whose core gave place to a large hillfort and a fortified settlement, with smaller villages and lodges clustered around them, and other settlements spread sporadically in the outskirts of the zone and a smaller (20 ha) earthwork (Medgyesegyháza-Lagzi-dűlő)[6] having dated to the Late Bronze Age. Differences in the complexity and size between fortifications, as well as smaller village-like settlements within its territory indicate a multi-level settlement hierarchy and a progress in settlement concentration.

As opposed to the settlement system composed of irregular linear-shaped riparian settlement structural units of Gáva culture settlements, the Middle Iron Age was characterised by a settlement structure of an intrinsically different basis in terms of environment, economy and society. This era is represented by large, riparian village-like (significantly intense) core

6 Szeverényi et al. 2017.

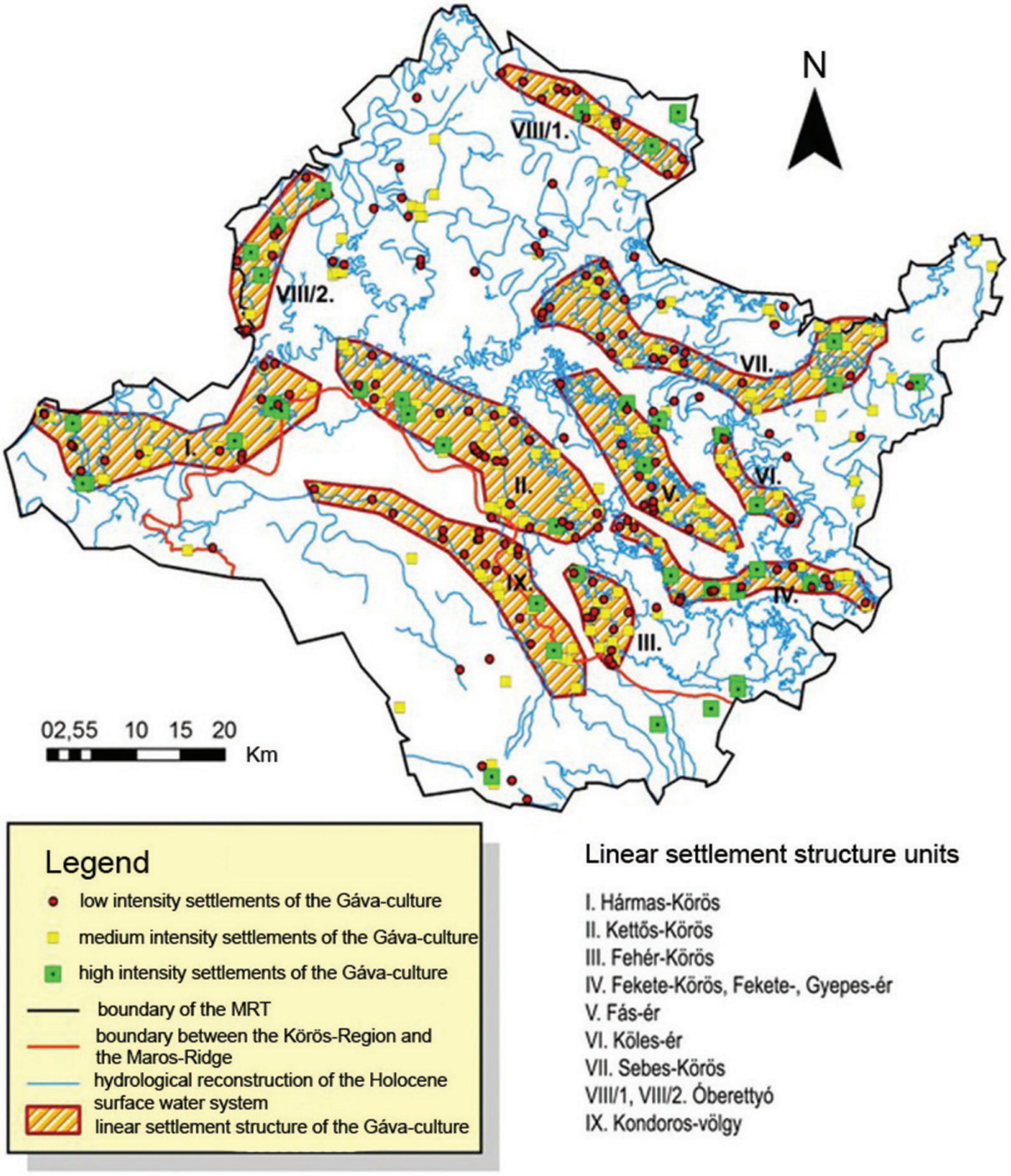


*Fig. 2.* The settlement system of the Gáva culture in the study area.

settlements consisting of more settlements and smaller clusters of (moderately intense) perennial settlements in their surroundings, as well as small camp-like sites (of low intensity) near the clusters.[7] I managed to identify 28 settlement clusters on the basis of analysing settlement intensity indices projected on the research area *(Fig. 3)*. Sites outside clusters were sporadic farm-like habitations (61.5%) and moderately intense perennial settlements (58.9%), both existing in about the same ratio. Settlements of significant intensity outside of the settlement structural unit were found in three cases altogether.

7 Gyucha 2001.

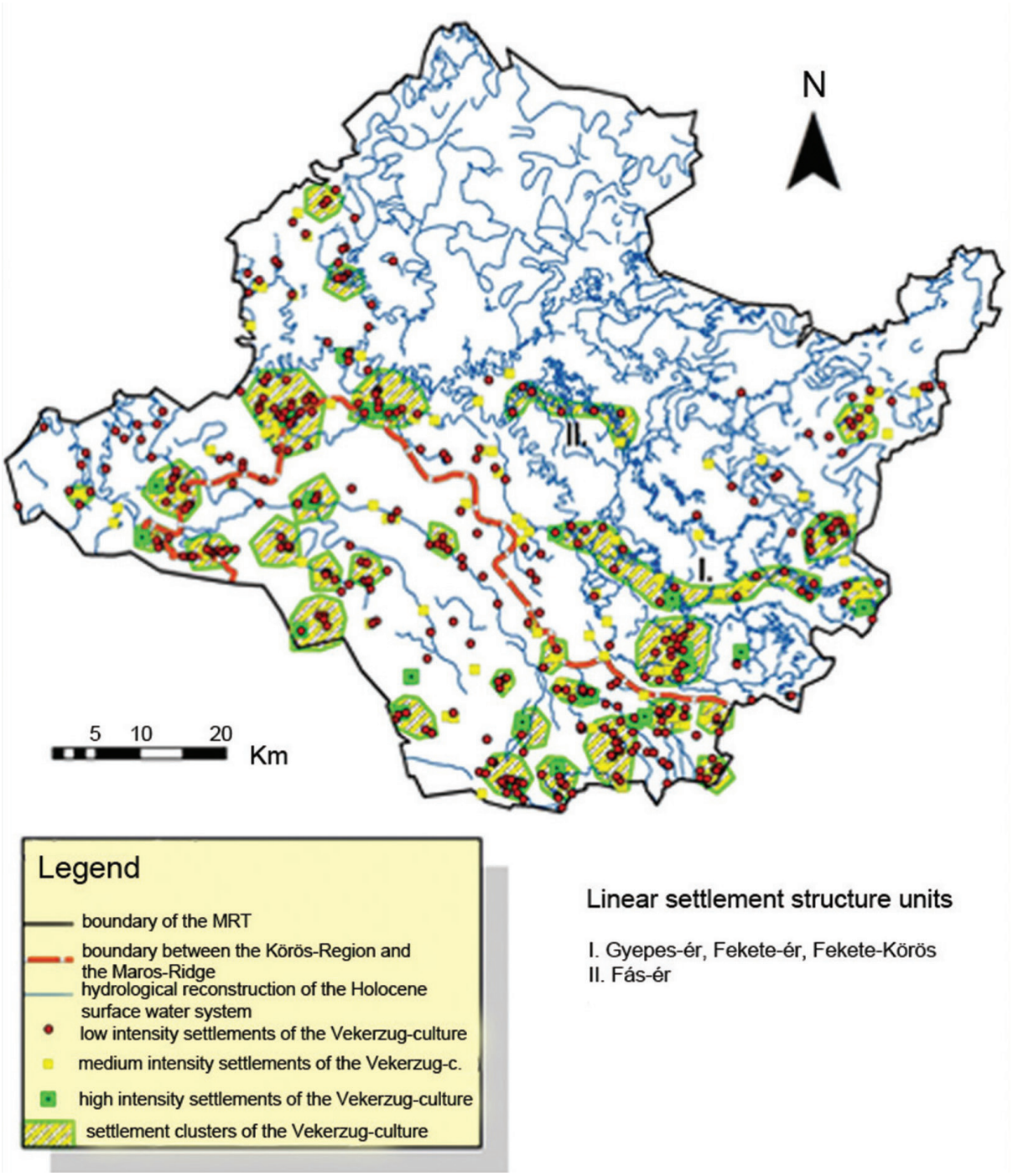


*Fig. 3.* The settlement system of the Vekerzug culture in the study area.

In the Late Iron Age, the third period under investigation, another structure being different from the settlement system of the preceding two eras can be delineated. The basis of the so-called linear cluster shape settlement network in our case is represented by the border area among the Fehér, the Kettős and the Hármas Körös Rivers and the Maros Fan, which was intensively occupied by Celtics *(Fig. 4)*. Beside the lengthy and wide linear clusters, one can also detect linear settlement structural units along smaller watercourses, like the Kondoros Valley, the Gyepes and Fekete Streams and the Óberettyó River, as well as irregularly and sporadically spread (moderately and slightly intensive) settlements in both the Körös Region and the Maros Fan. Two frequented clusters can be traced in the core habitation area – 40 kms

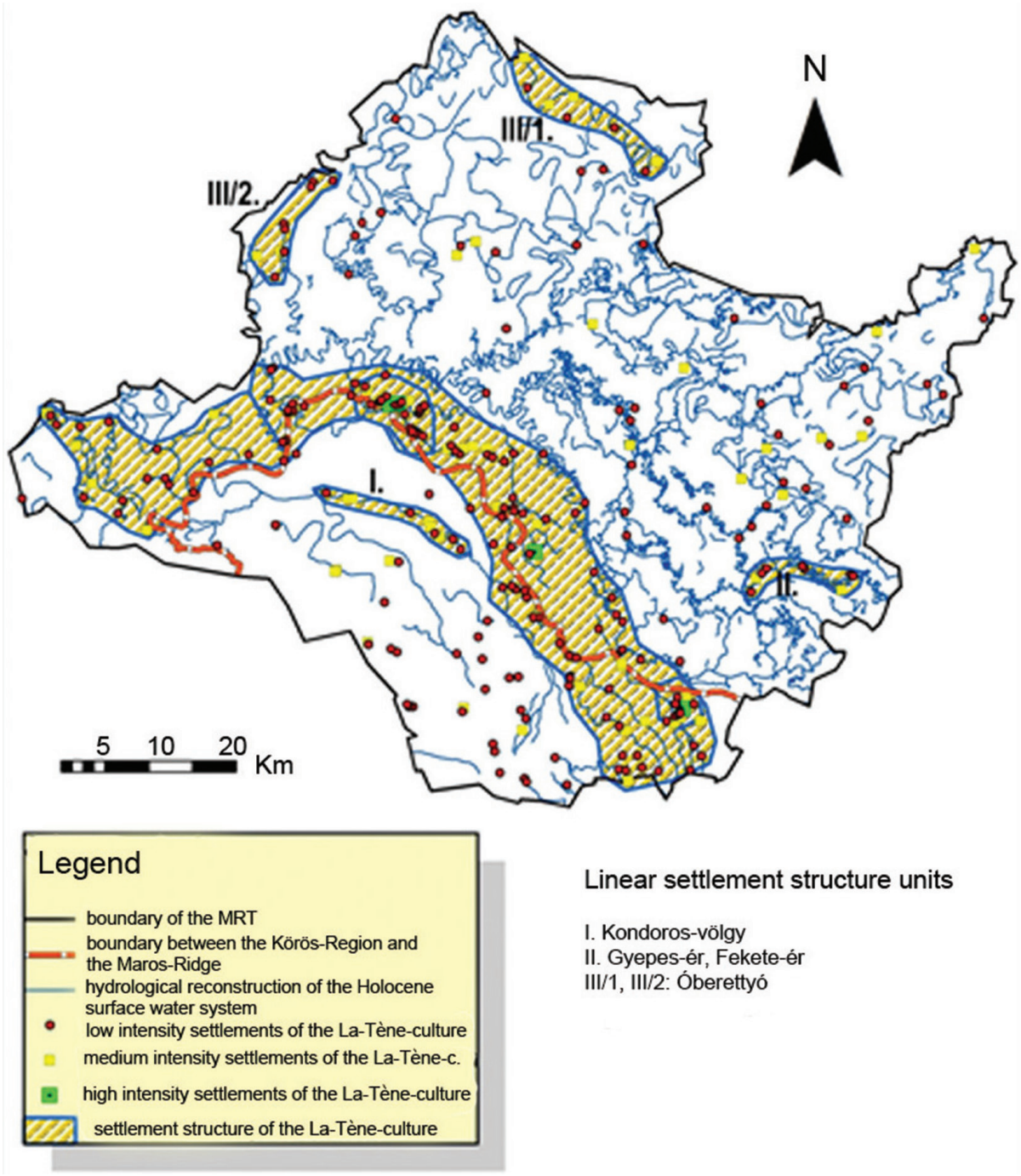


*Fig. 4.* The settlement system of the La Tène culture in the study area.

from each other – that consisted of one or two significantly intensive settlements and several moderately or slightly intensive settlements, similarly to what is experienced in case of the Scythian Age.

Beginning from the second half of the Late Bronze Age settlements' intensity had remarkably changed by the end of the Iron Age. The number of high-density settlements had gradually decreased (Gáva culture: 10.9%, Vekerzug culture 4.9%, La Tène culture 1,5% in relation to the total amount of settlements of the given period) similarly to medium-density sites (Gáva culture: 46.2%, Vekerzug culture: 29.3%, La Tène culture: 22%) *(Fig. 1)*. Whereas the number of low-density settlements had significantly grown (Gáva culture: 42.8%, Vekerzug culture 65.7%,

La Tène culture: 76.4%) *(Fig. 1)*. It appears that gradually fewer settlements tended to play a central, leading role within the settlement system. Certain kind of centralization processes began in the Middle Iron Age (settlement clusters, 28 pcs.), which intensified and culminated in the formation of two settlement clusters of central character in the Late Iron Age. It seems that besides a decreasing number of larger villages (clusters) taking central positions, remarkably smaller farmsteads and dwellings had become the bases of the settlement system. This process assumes social differentiation, a shift from the heterarchical model of settlement structure toward a hierarchical one, and the spread of a new economic model. That is based upon the population of the marginal zones (loess ridges), and the economic and social utilization of the fertile lands covering the latter, which were excellent for arable farming and grazing. The possession, accessibility and maintenance of larger grazing and arable lands were easier by means of developing more mobile hamlets.

## Paleoecological analysis of the settlements

Environmental endowments were determinant of the habitation customs of each culture. We assume that the population of those cultures adapted themselves to the contemporary weather, hydrological and topographical conditions, which played decisive roles in choosing locations of their habitats.

Gáva culture's population did not prefer any of the three reliefs (low ploodplain, high floodplain, terraces). They inhabited all three in about the same proportion. This fact marks the predictability and stability of the contemporary environment. "Humidity indicating" reliefs and sediments – e.g., low floodlains, lake sediments, peat bogs and saline soils – let us assume an unequivocally drier and warmer climatic phase in the Gáva culture's period (humidity indicator number: 37.1). Location of the settlements of the Scythian Age Vekerzug culture does, however, shed light on an entirely different aspect. They pulled up from lower floodplains to high floodplains that were less exposed to flood risk. Terraces were inhabited in a somewhat same ratio as in the Gáva culture, although the drastic decrease of humidity indicator number (to less than its half) and a sharp decline in the number of sites on saline soils refers to a settlement structure that was located on secure reliefs more protected from floods and surface waters (loess ridges, high floodplains, sandy surfaces) than those in preceding centuries, which can be explained by cooler climate with more precipitation and an increase in the intensity of floods. La Tène culture inhabited a variety of reliefs in a similar ratio to the Vekerzug culture. Nonetheless, meagre changes of the ratios, the increase in humidity indicator values (21.7), as well as the repeated growth of settlings on saline soils mark a moderate and well predictable riparian activity and the improvement of climate.

Distinctions/variations of the relationship between soil endowments of the research area and the location of its settlements are the most significantly transparent in the cases of Gáva and the Vekerzug cultures. On the contrary, indices of soil use are very similar in both the Middle and the Late Iron Ages. According to statistical analyses carried out on various soil types and settlements, soil endowments influenced settling circumstances in a different way in all three investigated periods. The fertile chernozem soils, which were the most suitable for agriculture, were equally preferred to meadow soils by settlers of both the Middle and the Late Iron Ages. We see right the opposite proportion in the Late Bronze Age. More than half of the Gáva culture settlements were located on meadow soils. One finds remarkably less sites on the weakly

fertile solonetzic and marshy meadow soils characterising lower and wet areas in the Iron Age than in the Late Bronze Age. Sharp shifts in the tendencies of soil use can refer to a change in the lifestyle and alterations in cultivation methods, as well as resulted from a different utilisation of natural resources necessitated by subsistence.

We conducted an analysis on the proximity to watercourses of the settlements in the research area that were associated with the Gáva culture, the Scythian Age Vekerzug culture and the La Tène culture by comparing our settlement database and the earlier introduced paleohydrological reconstruction.[8] Consequently, it seems to be general that a vast majority of the settlements of the three concerned cultures are located in a zone ranging between 50 and 500 meters from the prehistoric watercourses. We can also assert on the basis of the abovementioned data that Late Bronze Age Gáva culture's population established their sites in the main habitation zones close to watercourses, while they would use outer zones rarely. This proportion apparently modified at the end of the Early Iron Age and in the Middle Iron Age, as the Scythian Age Vekerzug culture began to utilise the outskirts to settle down to a greater extent beside the major habitation zones. The Late Iron Age brought a transition again in this respect. La Tène culture pulls closer to watercourses and rarely uses the peripheric zones for habitation. According to the change in the distance of settlements from watercourses, we can detect habitation in proximity to watercourses (low flood levels) in the Late Bronze Age, then a departure from water bodies (higher flood levels) at the end of the Early and in the Middle Iron Ages, whereas settlement structure located closer to watercourses again later on in the Late Iron Age. We can associate all the aforesaid processes most probably with the climatic and paleohydrological transitions, water level and the flood intensity  fluctuations of the region.

## Possible reasons of settlement historical changes

building the trench system of hillforts involved the use of a massive amount of timber, which implied deforestation. Its degree depended on the structural design of defensive lines. Based on conservative estimate, at least 22 but not more than 150–200 hectares of wood had to be clear-cut for the construction of the hillfort at Újkígyós. Such an immense amount of wood was unavailable in the proximity of fortified earthworks, therefore alluvial hardwood forests in the nearby flood basin were harvested for logs. Raw materials necessitated by the constructions of the hillforts at Újkígyós and others in the surrounding could have been obtained from forests of the Körös Region. One of the conclusions of the Late Bronze Age and Early Iron Age deforestation processes having proved likewise in the Great Hungarian Plain and of an increase in the amount of precipitation was a significant growth of surface water accumulation (inundation, flood). Although inhabitants of the Gáva culture in the Körös Region were not impelled so much by the increasing flood risk that would have led to their giving up advantages and yields of the flood basins. This strategy is clearly discernible by the hillfort at Sarkad, which could have fulfilled a least regional defensive role within the linear settlement structural unit. A great degree of the settlements is located in the low floodplains, in the riparian zones. Consequently, it was not the increasing precipitation nor the narrowing habitat caused by the floods that could primarily have incited the population of loess ridges, but rather the agricultural development detected in the Late Bronze Age and those environmental endowments that provided much better circumstances for animal husbandry and cereal growing.

8 Gyucha – Duffy 2008.

Soil erosion generated by deforestation in the mountainous regions[9] and the Great Hungarian Plain,[10] decreasing evaporation surface, increasing flow rates of rivers and the climatic period ("Little Ice Age")[11] characterised by a temperature drop culminating – all over Europe – in the transition period dated between the Late Bronze Age and the Iron Age (HB2–HC1, 900–700 B.C.) and by precipitation growth concluded significant amounts of excessive surface and groundwaters in lower areas of the Great Hungarian Plain, furthermore, the onetime flood-free higher areas were inundated or limited by floods[12] in the Early Iron Age. That process lasted until the end of the Middle Iron Age due to humid climate. Vekerzug culture inhabited higher reliefs (loess ridges) of the Körös Region and mainly the Békés–Csanád Alluvial Fan intensively as a consequence of decreasing habitats and agricultural lands in floodplains. Scythian settlements organised into clustered settlement structural units dominantly on the chernozem soils of loess ridges, high reliefs and zones being distant from watercourses adapted to the contemporary environmental circumstances, and made efforts to utilise the opportunities provided by loessic steppes the most optimal way possible. Although the Scythian had not abandoned higher floodplain areas of the Körös Region, but they relocated the centre of gravity of their habitation area to the Békés–Csanád Alluvial Fan, where on one hand, they could cultivate arable land and horticulture at high technological level and on high-quality soil, and could, on the other hand, keep animal stock on grazing lands (of circular shape with a 3–4 km radius) belonging to the settlement clusters.

Agriculture on loess ridges having developed in the Middle Iron Age was transformed in the Late Iron Age. In addition to the clustered linear settlement structure developed in the borderland between the riparian area and loess ridge, other areas of the Körös Region and the Békés–Csanád Alluvial Fan were sporadically populated by hamlets of the La Tène culture. Celtic settlements – similarly to those of the Scythian – are dominantly present on higher reliefs, but their number grew in lower-level riparian zones. This fact complies well with the decreasing precipitation distribution, warming and the moderation of flood intensity characterising the period. They could dominantly have kept cattle and swine on floodplain grazing lands. Hunting tendency is characterised by the ratio of Late Bronze Age again, even exceeds it slightly. Cultivation and maintenance of the high-quality (chernozem) arable and grazing lands of the loess ridge could not have been an issue due to the agricultural development experienced in the Late Iron Age (iron tools). We can assume the practice of dual economy based on the settlements' location, which tried to take advantage of the endowments of both landscapes.

## Conclusions

The spatial distribution of settlements on a macro- and microregional level and their differentiation and classification within this system on the basis of various attributes (size, intensity, structure) can contribute to a better understanding of certain changes in society. In the case of Gáva culture and its wider environment (Kyjatice culture, Gáva–Holihrady cul-

9 Willis et al. 1998; Sümegi 2003; Feurdean – Astaloş 2005; Feurdean 2005.

10 Willis et al. 1995; Sümegi 1998; Sümegi 1999; Magyari 2002; Sümegi 2004.

11 Barber et al. 2004; Bouzek 1999; Dirksen et al. 2005; Geel et al. 1999, 335-336; Kilian et al. 1995; Holzhauser et al. 2005; Kiss – Kulcsár 2007, 115–116; Mauquoy et al. 2004; Sümegi 2004, 327; Sümegi et al. 2004; Sümegi et al. 2007, 250–251; Sümegi – Jakab 2007, 77; Zolitschka et al. 2003, 90–92.

12 Metzner-Nebelsick 2000; Bóka 2008b, 159–160.

ture, Urnfield complex) we can delineate a significant settlement historical process that culminated in an expansion to areas having rarely inhabited earlier (e.g., loess ridges, mountainous areas, caves)[13] and the appearance of large fortified settlements, as well as hillfort systems.[14]

Hillforts of different extension, which could have been core locations of the contemporary settlement structure, were emblematic settlement forms of the pre-Gáva period. Relying on ceramic sherds and radiocarbon dates obtained during excavations, they were established on loess fans (e.g., Békés–Csanád Alluvial Fan) elevating among landscapes of greater rivers (Tisza, Maros, Köröses) in the BD–HA1 periods: Csanádpalota-Földvár (1380–1120 cal. BC),[15] Sântana-Cetatea Veche (1400–1300 cal. BC),[16] Cornesti-Iarcuri (1450–1200 cal. BC)[17] and Újkígyós-Örökföldek (1420–1136 cal. BC). The involvement of high-quality chernozem soils and extensive pastures on high reliefs could have represented the opening session of the hillforts' establishment. All these were enabled by an "agricultural revolution" detected in several regions of Europe, too, which began to use stable and open habitats[18] due to deforestation and apply new technologies (heavier plough, manuring, crop rotation) for the sake of a sustainable agricultural system.[19] Water supply of the onetime Maros tributaries (Száraz Creek, Kamut Creek, Kondoros Valley) could have been of key importance in the prehistoric population of the loess ridges. Increasing precipitation rates and higher water levels (e.g., Lake Balaton)[20]


*Fig. 5.* Storage vessel depot from Újkígyós-Örökföldek

13 V. Szabó 2004, 149.
14 Bóka 2008b;Bóka 2017; Lichtenstein – Rózsa 2007; Szeverényi et al. 2014; Szeverényi et al. 2015; Czukor et al. 2017; V. Szabó 2017.
15 Szeverényi et al. 2015
16 Sava et al. 2019, Fig. 10.
17 Szentmiklósi et al. 2011, 828.
18 Chapman et al. 2009.
19 Kneisel 2015.
20 Sümegi et al. 2015, 249–256.

could have permanently connected the waterbeds of these tributaries to larger catchment areas by means of reaching far into the loessic steppe from the second half of the Late Bronze Age. Through these "freshwater channels" Late Bronze Age settlers could have intruded to the core areas of loess ridges, where they could construct their linear settlement structural units well known[21] from the floodplains. By breaking ground of high-quality soils and involving extensive pastures in practically intact, large flood-free areas of the prehistory, the Late Bronze Age community could have faced such a great economic impulse that it had to defend its accumulated products (grain and animal stocks) on one hand, and connect them to the contemporary commercial system on the other hand *(Fig. 5)*.

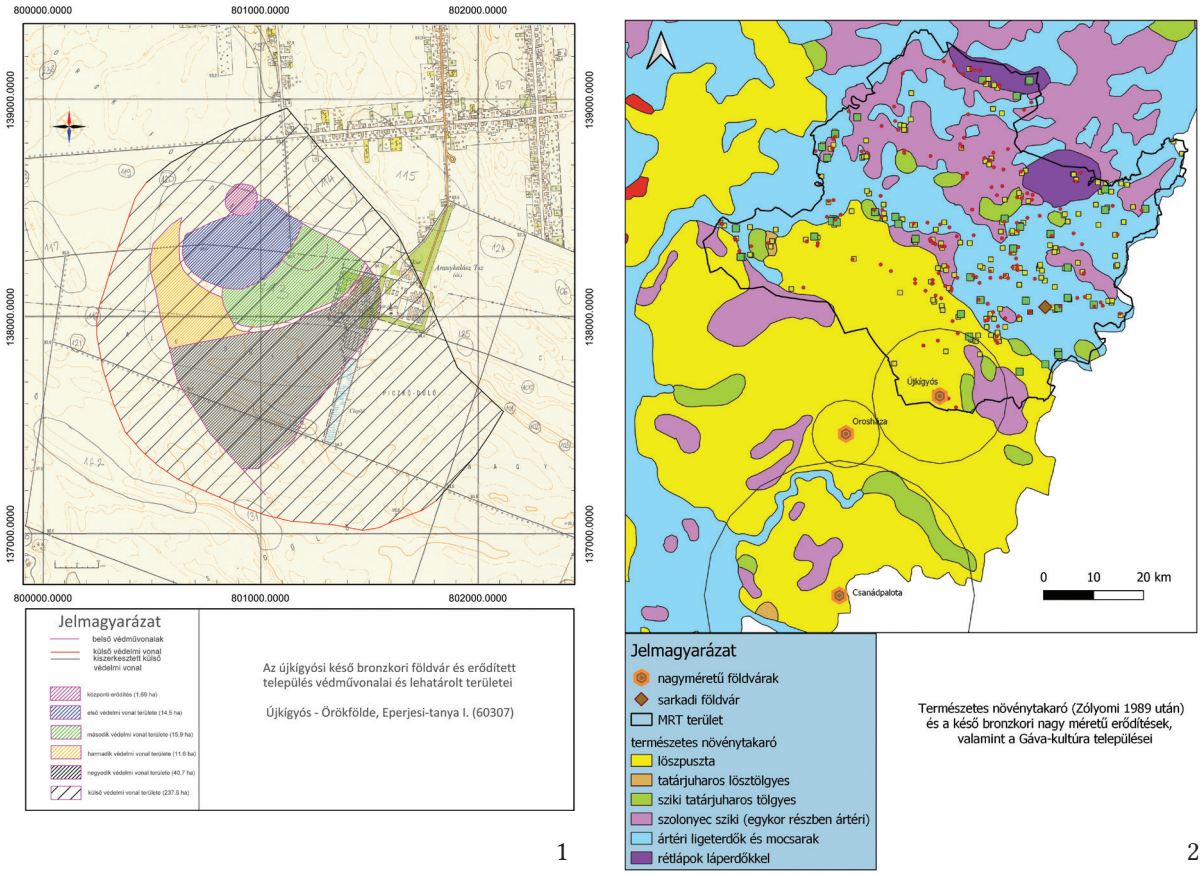


*Fig. 6.* 1 – The lines of defense of the Late Bronze Age fortified earthwork at Újkígyós, 2 – Late Bronze Age large fortifications and their territory in the Southeast Great Hungarian Plain.

The controlling and organising centres of this process could have been hillforts of various size, which supervised different size of areas (e.g., Újkígyós-Örökföldek, Csanádpalota-Földvár, Orosháza-Nagytatársánc) *(Fig. 6.1,2)*. Distinctions between the complexity and extension of the fortified earthworks, and smaller village-like sites within their territory indicate a multi-level settlement hierarchy and a certain process of settlement concentration. Extensive fortified settlements could possibly represent the habitations of the contemporary elite, as well as their military, political and economic centre.[22]

21 V. Szabó, 2004, 150; Priskin et al. 2013, Fig. 10.
22 Czukor et al. 2017, 214; V. Szabó 2017, 249.

The irregular linear settlement structure of the Körös Region could be classified into three categories. We can associate poorly intensive sites with farmsteads or hamlets, moderately intensive ones with small villages, whereas those of significant intensity with larger villages and central sites.[23] The village-like riparian settlements characterised by more intensive artefact assemblage within the individual linear settlement structural unit and their leading stratum could have shared the political power. The centres were situated along a regular linear pattern ca. 3600 metres from one another and could have possessed circular areas of a diameter of 2–3 kms. Large, intensive flat sites typical of riparian areas (e.g., at Baks and Poroszló) are unknown from our research area.[24] This central and leading position could have probably been held by the fortification identified at Sarkad-Vár-tábla site at the onetime Fekete Körös riverbank and by its outskirt, Doboz-Kékfű site having been dated to HA2–HB2/HB3 periods.

Settlement system of the BD and HaB1 periods in the Great Hungarian Plain presents a strongly mosaic-like pattern. Settlement networks represent different structures organically corresponding to the ecological relations, the economic features of culture and the optimum of livelihood along greater rivers from lower, inundated areas characterised by dense river and stream network and from loess ridges on higher reliefs. As opposed to the hillfort system on loess ridges, which is characterised by a hierarchic settlement structure, one can identify a multi-centred settlement structure in areas along greater rivers and their floodplains, whose core could have been extensive, intensive flat settlements (Baks, Poroszló) or fortifications and their surrounding settlements (Sarkad-Doboz).

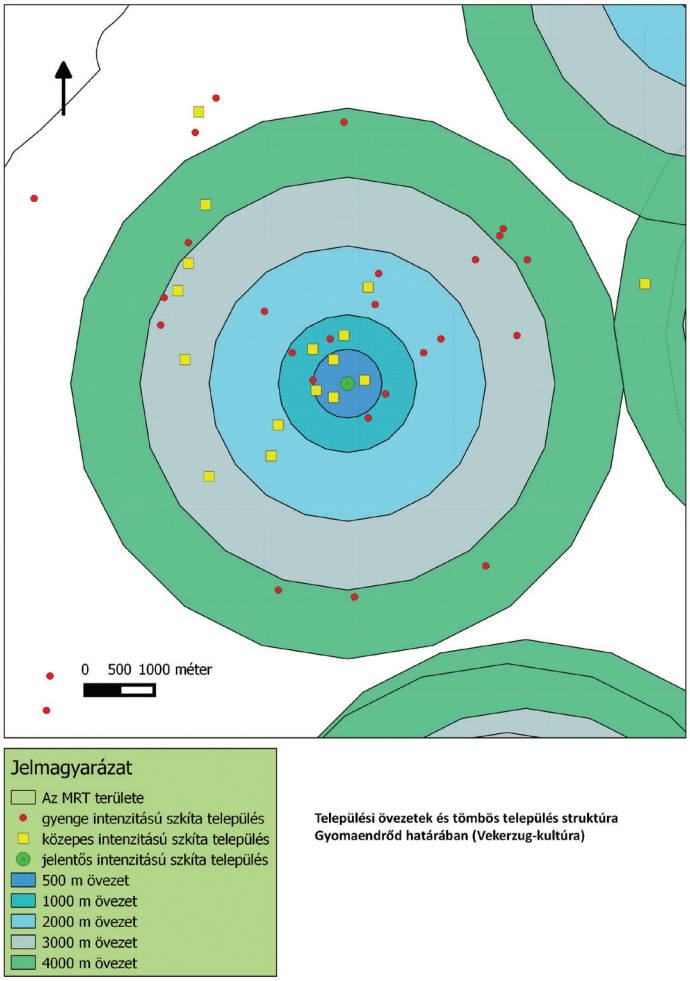


*Fig. 7.* Settlement clusters and their structure (Gyomaendrőd, Vekerzug culture).

Clustered settlement structural units of the Vekerzug culture established on high reliefs of the Körös Region and loess ridges can be identified with larger individual settlement groups, whose core is represented by settlements of significant intensity. Hungarian urban geography assigns the name *"szer"* (row of houses) to the settlement type represented by small groups of houses independent from each other but belonging to the same administra-

23 Bóka 2013; Bóka et al. 2017.
24 Bóka 2013; Bóka et al. 2017.

tive framework.[25] Scythian Age settlement clusters very similar to the *"szer"*-like settlement system consisted of a varying number of settlements. Their extensions range between smaller ones of 5–6 sites and giant settlement clusters embracing 35–40 settlements (e.g., Gyula cluster, Gyomaendrőd cluster). These clusters are mostly located near a temporary or permanent watercourse. Their central settlements of significant intensity – sometimes more, even 2 or 3 settlements – could have covered a round area with a diameter of 3–4 kms, in which different size settlements were located sporadically, in a couple of hundred meters distance from one another. We can still consider the concentric settlement pattern and multi-centered structure in the Early Iron Age Körös Region.

Settlement clusters identified in the Körös Region could have been under the control of individual clans or minor chiefdoms. Smaller clusters and the adjacent areas could have been inhabited by a larger family, whereas giant clusters consisting of many settlements could have controlled by clans or chiefdoms (e.g., Gyomandrőd cluster) *(Fig. 7)*. Scythian settlements in the Early and Middle Iron Ages could primarily have located on loess ridges because of cold and rainy weather, the permanent flood risk, and their economic structure. They divided flat and open areas and developed settlement structural units similar to the *"szer"*-like settlement groups along the onetime Maros tributaries (Kamut Creek, Hajdú Stream, Kondoros Valley), which split loess ridges, and in the border zone between the Maros Fan and the Körös Region in the HD–LT A periods. They lived settled lifestyle in their dwellings *(Fig. 8)*, grew a multitude of cereals (mainly millet and barley), garden legumes and hemp (Gyomanedrőd-Pavlik-tanya).

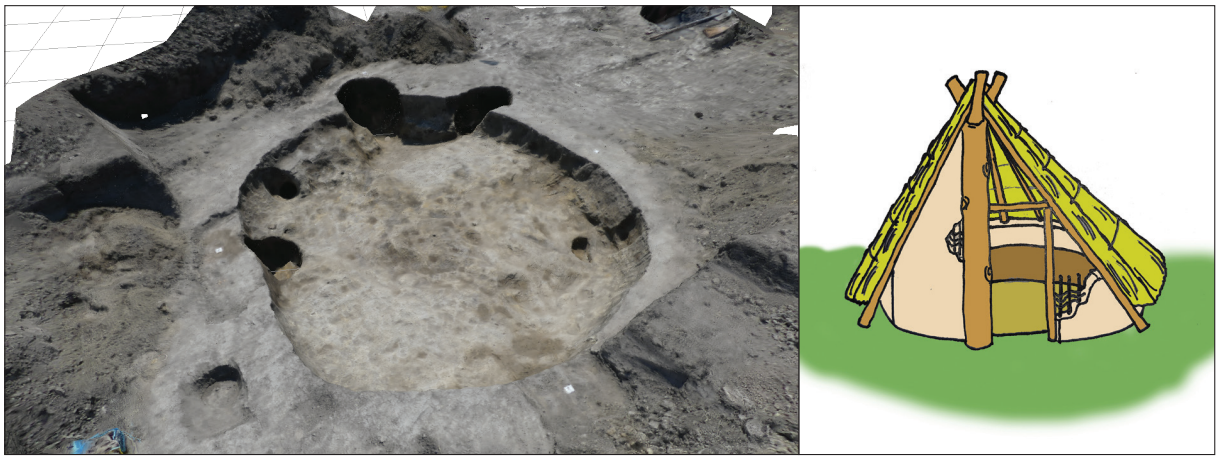

*Fig. 8.* 3D photogrammetry and reconstruction drawing of the Scythian building in Gyomaendrőd (photo and graphic: G. Bóka).

Their animal stock were kept on dry grasslands within their territory, or they could have put their animals to graze inside the loess steppe by means and help of a growing number of seasonal sites, wandering from one pasture to another in certain cases. Domestic animal husbandry characterising the Vekerzug culture could have adapted to that kind of movement, therefore preferred more mobilisable breeds (cattle, sheep/goat, horse). Horse-breeding among these must be outlined as important, which is also supported by the growing practice of oat (Gyomaendrőd-Pavlik-tanya, Ebes-Zsong Valley).

25 Füzes – Kisbán 1997, 74.

Oppida have not been identified so far in the Körös Region, although results of the Late Iron Age settlement system indicate certain degree of centralisation processes. Accomplishment of the "Iron Age farmstead-forming process" detected in the Körös Region can be traced in other Hungarian regions, as well as in other Central and Western European areas in the Iron Age. It is generally argued that Hungarian open settlements dated to the LT B1–C1/C2 period are small, characterised by village-like character (farmsteads, smaller villages), their site structure is built up by a few number of houses in sporadic pattern, and had been established near freshwaters, and thread linearly along rivers, on low hilltops and terraces.

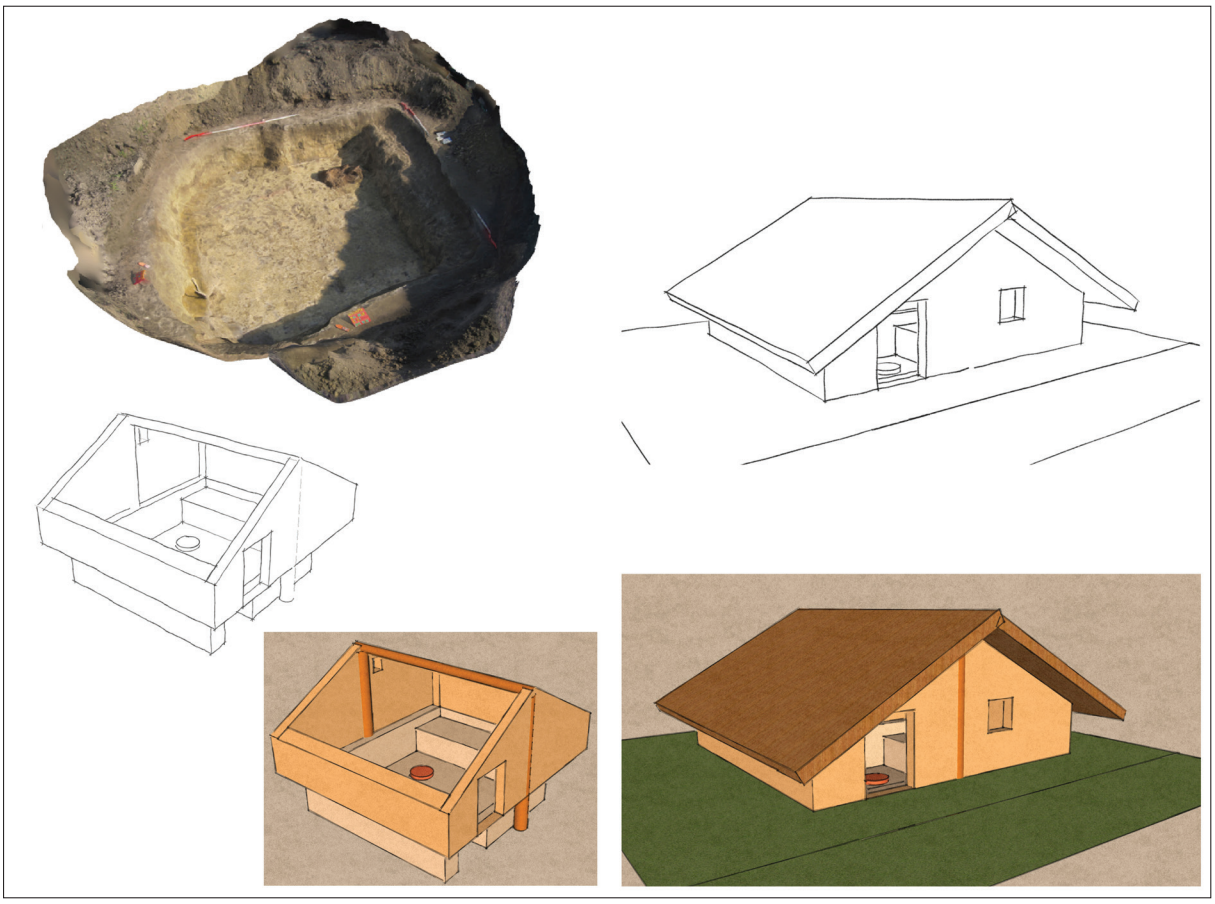

*Fig. 9.* 3D photogrammetry and reconstruction drawing of the La Tène building in Békésszentandrás (photo and graphic: G. Bóka).

One can detect two central settlement clusters (those of Gyoma and Gyula) in the main habitation territory of the clustered linear settlement system in the border zone between the Maros Fan and the Körös Region, whose locations are of strategic importance *(Fig. 10)*. The cluster at Gyula is located at the confluence of the Sebes Körös and the Kettős Körös Rivers, as well as in the intersection of the loess ridge and the riparian area. Its central role is proved by the presence of Celtic cemeteries discovered[26] in its neighbourhood and the significantly intensive settlements (Gyomandrőd-Tari-tanya) characterised by an internal settlement structure typical of the LTB2–C1 period. Beside the diminishing number of (2 pcs) settlement clusters holding central and leading role, habitations of far less extensive farmsteads or hamlets

26 Maráz 1977; Maráz 1981.

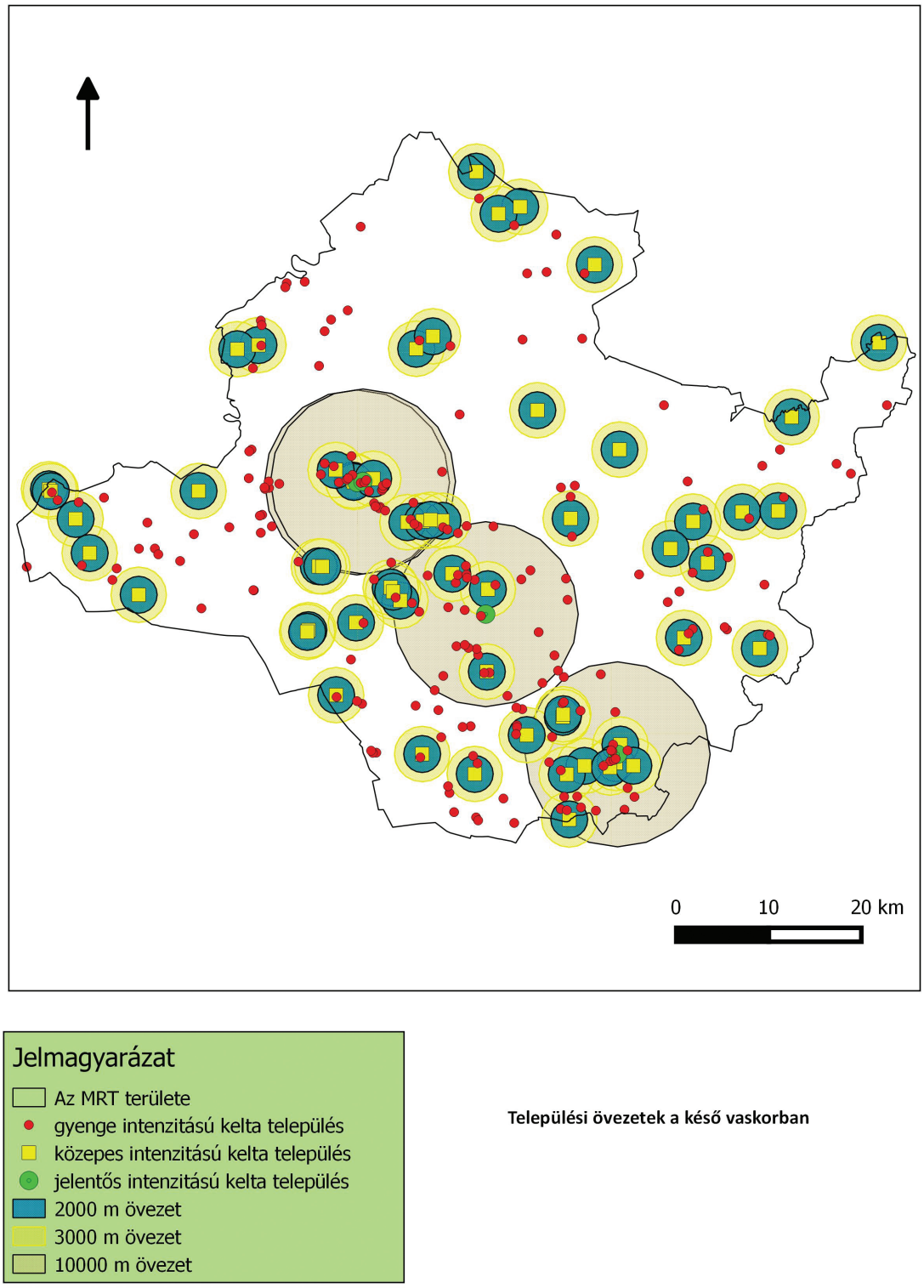


*Fig. 10.* Settlement clusters around medium-intensity settlements (La Tène culture).

(Békésszentandrás-Homok-hát-dűlő) became representative of the settlement system in the Körös Region *(Fig. 9)*. This process assumes social differentiation, a shift from the heterarchical model of settlement structure toward a hierarchical one, and the spread of a dual economic model, whose fundamentals are as much the loess ridge, as the population of the Körös Region, as well as the exploitation of the available natural resources, and their economic and social utilisability.

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