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# THE ROLE OF THE FRENCH MICRO-REGIONAL CO-OPERATIONS IN THE SYSTEM OF REGIONAL AND RURAL DEVELOPMENT

Theses of Ph.D. dissertation

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# Introduction, research objectives

During my rural studies I had the opportunity to know the methodology, institutional system, and partly the practice of the French regional and rural development. The study trips and the review of the literature in the field encouraged me to summarize my experiences and statements in the doctoral theses.

Although France has different physical geographical character compared to Hungary, there are similarities in the spatial structure and public administrational traditions, e.g. the dominance of the capital, capital-centred transport network, determinant agricultural history, huge regional differences in the country, the specific role of counties in public administration, settlement structure with less settlement size, a huge number of local governments.

Although several studies were published on the French regional and rural development in Hungary, these focused on mainly their certain elements or attempts, they were not comprehensive (e.g. ÉCREMENT, B. et al. 2001, EGYED I. 2014, BARTA GY. 1992, BENKO G. 2002).

In the dissertation two main parts of the French regional policy are assessed: the spatial allocation used in the regional and rural developments, and the framework of these activities, the development of the institutional system. The investigated spatial unit and the level of the assessment is the micro-region. This spatial level is a part of the geographical space that is a place for everyday life of the inhabitants; a greater spatial unit beyond the settlement borders that are determined by their everyday-migration and relation-system (G. FEKETE É.—BODOLAI É. 1995, CSATÁRI B. 2002, PAP N. 2007).

According to the experiences of the past centuries in France, the level of settlement association can play an effective role in the governance, services, development and co-operation (DELANNOY, M.-A.—RIEU, J.—PALLEZ, F. 2004, DESJARDINS, X. 2006, DEFFIGIER, C. 2007). In Hungary, despite of the changes observed in the last decades, the experiences also showed that this level could become an existing scene of real development power with a proper background (G. FEKETE É.—BODOLAI É. 1995, PÁLNÉ KOVÁCS I. 1995, CSATÁRI B. 2002).

The reason for the existence of a level between the settlement and the county is not a question, however, there were debates on its delineation, its role in regional and rural development, its real limits, the structural, legal and financial framework in France and also in Hungary, that are still present. Although, there is a significant difference between the sizes, historical, economic and cultural background of the two countries, the aims

and legal background of the co-operation forms, the operational tools and institutional background on micro-regional level are worth to have a scientific comparison.

In the dissertation I had three main goals:

- 1. to show the approach, institutional system, legal background and certain planning methods of French regional and rural development, and their main geographic elements
- to assess the development history of the French regional organization and to compare with the Hungarian settlement associations.
- 3. to reveal the similarities and differences between the French and Hungarian regional, settlement (micro-regional) co-operations, focusing on their supporting and limiting factors.

The main questions are as follows:

- Is the French approach of the delineation of the rural-urban space, looking back a long time serving regional development aims, applicable in Hungary?
- Which are those main elements and factors that cause the more efficiency of the French settlement associations?
- What kind of future possibilities can the Hungarian settlement associations have?

# **Applied research methods**

The analysis was revealed partly having a character of a monograph, in which the comparative assessment of the international and national publications was aimed, with a special emphasis on the adaptation of the French studies in Hungarian rural science.

During the related literature analysis, printed book and journal publications, internet resources (e.g. TÉT, A Falu), regional development documents (e.g. <a href="www.terport.hu">www.terport.hu</a>), furthermore legal background were assessed. English publications were searched using Science Direct (<a href="http://www.sciencedirect.com">http://www.sciencedirect.com</a>) (e.g. Journal of Rural Studies) and the studies available via internet and the university library were also used.

French studies are from French scientific journals and doctoral theses, materials and assessments of professional organizations. Publications on legal background, debates and comments on regional cooperations, furthermore studies of the French ministries were reviewed.

They were accessed via four journal databases: <a href="www.persee.fr">www.persee.fr</a>, <a href="www.cairn.info/">www.cairn.info/</a>, <a href="http://norois.revues.org/">http://ruralia.revues.org/</a>. The last one was founded by the Association of the French Ruralists (l'Association des Ruralistes Français) and it publishes specific articles connected to rural space.

The dissertation has two empirical parts. In the first one, the definitions of rural space and the adaptability of the French delineation method are assessed in the case of three Hungarian counties. In connection with the second one, I interviewed employees (or previously employed people) of micro-regional associations of rural type in South Hungary, and similarities and difficulties in structure and operation of Hungarian and French micro-regions were revealed. Population and spatial settlement data of the Hungarian Statistical Office were used in the methodological adaptation of delineating the rural and urban areas. Distance data for the calculations was from the CORINE Database. Results were compared to the delineation of the settlement co-operations made by the Hungarian Statistical Office in 2003. In the second empirical part of the analysis interviewing was used among the qualitative methods. Interviews are thematic in the point of their content, and semi-structured in the point of formal constrains. I prepared ten main questions and tried to guide the conversations that the interviewed people tell their detailed opinion on the experiences about rural settlement associations, their approaches in the field. During the analysis of the interviews previous studies and research results were also used, furthermore, the questionnaire research ordered by the French ADCF (Assemblée des Communautés de France) was also applied to compare with the French results. Based on the experiences of the interviews, two criteria, approaches were outlined for the comparison of the French and the Hungarian settlement associations. Based on the assessment results, I prepared three models for the future of the multi-purpose microregional associations.

### **Summary of results**

1. French experts developed the zonal method for describing the spatial changes that allocates spatial units according to predefined features (that are statistically reliable). An advantage of the method is that it is able to describe transitional areas which are important for regional planning. The first step in the development of zonality was the definition of urban unit in 1954. Three conditions have to be met for the allocation of urban unit referring to their coherent built-up area, population and location (Fig. 1).

Fig. 1: Criteria of urban unit allocation

1. The zone of coherent
built-up area means where
the distance between two
facilities is not over 200 m

2. At least 2000 inhabitants live in this coherent built-up area

3. 50 % of the inhabitants of each affected settlement live in this coherent built-up area



(Resource: INSEE – AULAB, 2012.)

Urban units involve separate towns or cities and urban agglomeration of more settlements, thus all other settlements, that are not part of the urban unit, are rural. If urban unit is one settlement, it is called independent urban settlement (town/city). If urban unit involves more settlements, it is called urban agglomerations or agglomerations of more settlements. Settlements of urban agglomerations are urban centres or edgecities. If a settlement has a population over 50% of the agglomeration, it is the only urban centre. If more settlement has a population over 50% of the most populated settlement, all of these are considered as urban centres. Those urban settlements, that are not urban centres, they set up the edgecities of urban agglomerations. An urban agglomeration can consist of only urban centres (CLANCHÉ, F.–RASCOL, O., 2011). Based on these, all French settlement can be classified to one category:

- rural settlement, that is not urban unit
- urban unit classified as independent city or town
- urban unit classified as urban agglomeration of more settlements, involving urban centres and edge-cities

Urban units are revised in the case of every population census, since due to urbanization their number and size continuously change. The basis of the classification is the previous population census completed by the assessment of new maps and ortho photos, and if it is necessary, field work (LE GLÉAU, J.-P., 1996).

The next step of the methodological development, due to urbanization

and the changes, was ZPIU in 1962, ZAU in 1996 and the improved versions in 2002 and 2010<sup>1</sup> that required software background. It was important in the methodological development to be applicable for monitoring and comparison, beyond the description of spatial processes. Thus, the interpretation of space in geographical aspects became diverse, which made the illustration possible that rural settlements exist in the urban space units, and there are urban settlements in the rural space as well. The method of zone classification exists in country and regional scale planning as well. Furthermore, there is an attempt to make real (legal) connections between micro-regional co-operations (EPCIs) and metropolitan areas delineated by this method. It is important from two aspects: on one hand, researchers, planners and politicians continuously have debate on the determination of the ideal and adequate region or area of intervention in planning and projects. On the other hand, in this way the state supports the organization of the associations (EPCIs) not only along local political interest and sympathy, but based on real spatial processes (e.g. spatial migration and connections of inhabitants), that is to be coherent field of interest in geographical, social and economic viewpoints as well.

2. The method of urban unit delineation can be limitedly used in Hungary, which is an initial step of the zonal classification method of French settlements. Based on the accessible methodology, its usage was tested on three Hungarian counties with typical settlement network: Vas, Csongrád and Pest Counties. My experimental calculations in the fragmented settlement structure and the agglomerated regions brought real results. Vas County, characterized by small villages, is determined mainly by rural space due to the features of the settlements, while in Pest County the towns and the settlements forming urban units are mostly represented (Fig. 2).

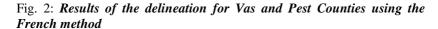
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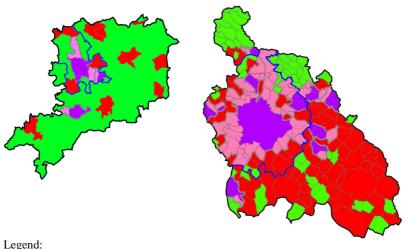
 $<sup>^{1}\</sup>mathrm{ZPIU}$  (zones de peuplement industriel ou urbain) – Industrial or urban population zones

ZAU (zonage en aire urbaine) - zonality of urban area

ZAU-R 2002 (Zonage en Aires Urbaines et Aires d'Emploi de l'Espace Rural) – Zonality of urban areas and the employment areas of rural space

ZAU-R 2010 – Zonality of urban areas and rural space version 2010

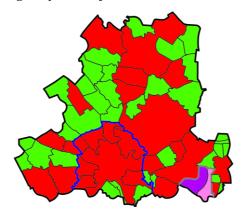




Urban space; Urban unit; Urban unit involving more settlements (urban centre); Urban unit involving more settlements (not an urban centre); Urban unit involving more settlements; Urban unit involving more settlements; Urban urban unit involving more settlements; Urban urban urban centre); Urban unit involving more settlements; Urban u

In Csongrád County the ratio of urban units refers to high urbanization that can be misleading. The settlements of this county on the Great Plain – characterized by extended previously agricultural towns – are different from the French ones. 'Tanya' inhabited areas in outskirt areas are sometimes in distances less than 200 m, thus considering this information, most settlements in this county would become an urban unit involving more settlements. Finally, I decided not to involve 'tanya' as a combining element in the Great Hungarian Plain in contrast to the French method, since they are not elements of an intensively joint urban and agglomeration settlement type. However, the method describes Csongrád County as a highly urbanized unit in this was as well (Fig. 3).

Fig. 3: Results of the delineation for Csongrád County using the French method considering 'tanya' not a joint element



Legend:

Hungarian test calculations show similarities to the KSH agglomeration delineation. In France rather a narrow urban space, a built-up central urban area is considered as urban unit officially. It seems that the French method of determining urban units, better joint to real urban and rural space, can be applicable in Hungary for allocating not the urban, but rural spaces. The French method would be suitable for long term monitoring of spatial changes of settlements, as it has been already mentioned in French scientific studies. The method for determining urban and rural units, applied systematically in France for decades, can be used effectively in Hungary, despite of the often changing administrative and regional classification methods.

- 3. There are many similarities in the development history of the Hungarian and French micro-regional cooperations. The differences originate from the fact that French associations started to be initiated 60 years ago, in the period of extensive urbanization, and Hungarian ones go back only to 20 years, the period of economic-social system change. The further findings can be drawn:
- The common realized economic-financial-resource interest initiated the organization of the associations in both countries; their aims involved

- the more cost-effective realization of commonly defined public tasks and the project resources in a well-defined geographical space.
- In both countries 'one-' and 'multi-purpose' associations were born, but they chose other organizational forms (foundations, associations) to implement the common goals of the settlements.
- In France the organizational process was promoted by the state letting the bottom-up approach possible; In Hungary they were initiated from the top, and legal and state decisions were born later that terminated the legal and financial uncertainties of the associations.
- According to the review of the history of the associations in France, an
  increasing role was given to the project-type development co-operations
  besides the obligatory tasks; in Hungary until 2004 they did not
  regulated the legal and financial background.
- In both countries state intentions were born on the simplification, unification and total spatial coverage of the organizational forms. While in France they aimed to make a real organizational diversity to be simple, transparent and cost-effective, in Hungary uniformity and costeffective realization of public functions were focused.

After the micro-regional regulation process in 2004 there was an opportunity of the Hungarian multi-purpose associations to follow the French one. According to the opinion of the micro-regional staff, project-type co-operations were born besides the public task oriented work, however, the law in 2011 (2011 CLXXXIX Law on Hungarian local governments) disrupted this process. The organizational and legal framework has significantly changed.

4. Based on the assessment of the structural and operational framework of the Hungarian and French settlement associations, the following main findings can be done:

#### Similarities:

- The problem of the economic operational size is important; the main criteria of the determination are the efficiency and economy of public functions.
- An important element is the voluntary joining of settlements and the solidarity of local communities towards each-other.
- In the point of formation and stabilized operation experts of both countries pointed that it is important to have a state level regulation and financial background, furthermore, on local level a competent working organization and a positive attitude of majors are required.

- The participation and activity of the local society is low in both countries according to the opinion of the experts and it is characteristic in such issues that directly impact the inhabitants and/or nongovernmental organizations.
- In both countries the opinion on urban-rural connections is influenced by the political-power dominance of the central settlement, which was regulated properly by the state on a legal basis, however, on local level the role and attitude of local leaders are of great importance.
- The role of the participating majors in the settlement associations is determinant. Their willingness, awareness, political preferences, personal relations influence the content and effective operation of settlement co-operations.
- Experts in both countries have an opinion that micro-regional cooperation can successfully fulfil their tasks and they are able to develop in case of proper conditions.

#### Differences:

- The Hungarian settlement co-operations were firstly of development and project type, than later between 2004 and 2011 served mostly public tasks. In France, urban and agglomerated regional communities are determined by project-type co-operation, only some small and medium, settlement-sized co-operations belong to the other type serving public tasks.
- The communication activity of Hungarian multi-purpose settlement associations are mostly as it is predefined by the project applications. However, French ones regularly publish publications and occur in the local media (local radio, television, internet sites, on the board of the major's office etc.).
- The social involvement is much better in the case of the French settlement co-operations, and they consider as a significant development that in 2014 representatives were directly elected to the settlement association boards.
- The French regional planning system is well developed in contrast to the Hungarian one (in the point of institutional, legal and financing aspects as well), the performed tasks can be controlled, the plan documents of the certain regional levels are built on each other and they are in coherence with the tendering system.
- Due to the often changing legal regulations of settlement associations in Hungary, the development and the social involvement is restrained. The French regional co-operations are the result of a development process;

- however, according to some opinions they can be overviewed with difficulties.
- The French settlement co-operations have independent working organizations, which work in the frames of EPCI<sup>2</sup> and they have significant revenues (membership fees, tax revenues, general state operational fund and different project resources). In contrast, in the case of the Hungarian ones, the Law in 2011 disrupted their independent working organizations, and due to the new administration system ("járás"), they have lost their tasks and normative.
- 5. There are factors that support and inhibit municipal co-operations. In their assessment the following results were found:

# Similarities in the case of the supporting factors:

- The existing relationships (e.g. family relations, social, economic, cultural relations etc.) are determinant factors in the formation of cooperations in both countries.
- On local level, the additional resources (and normatives supporting functioning), the cost-effective realization of public functions, more accepted projects are the main goals and tasks, furthermore the "site maintenance", improvement and quality development of services.
- Both countries attempt the mitigation of costs and the increasing efficiency of resource usage, but in a different way. In Hungary a kind of centralization is realizing by an increasing state control, while French strengthens decentralization by allowing more possibilities of local levels, and state organizations have only controlling and advisory functions.
- The fulfilment of regional and rural development tasks and challenges in connection with EU membership is similar: general directives play important role (e.g. sustainability, effective resource use, improving competitiveness etc.).

## <u>Differences in the case of the supporting factors:</u>

- In Hungarian settlement associations, there is an emphasis on economic development, job creation, maintenance and development of existing institutions, compensation of lack in resources of local governments
- In French settlement associations the focus is on regional-landscape approach and sustainability (e.g. touristic developments, protection of built heritage, landscape protection, and environmental protection).

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<sup>&</sup>lt;sup>2</sup> Établissement Public de Coopération Intercommunale – Public organisation supporting inter-municipal co-operations

In Hungary the cost-effective regional public task management is important

#### Similarities in the case of the inhibiting factors:

- The settlement co-operation of both countries would like independency.
- The lack of information flow is a problem in Hungary and France as well, because it can lead to misunderstandings and it makes the efficiency of co-operation worse.
- In the case of the associations in both countries fear appeared about the loss of power and the related decreasing resources.
- There is conflict of interest between majors and the political elite that causes conflicts, furthermore the fear from the dominance of the central settlement.

#### Differences in the case of the inhibiting factors:

- Based on the literature it can be stated that French inhabitants are afraid
  of increasing taxes, since the associations can have the right to levy
  taxes.
- The Hungarian micro-regional identity is weak, but French inhabitants are afraid of loosing local identity according to the related literature.
- There are aversions of financial handover that would be necessary on settlement level (settlement contributions to operation).
- In Hungary the Law in 2011 basically altered the operational framework
  of settlement associations that caused uncertainties. In French the tax
  and subsidy system were under reform, but they did not make the work
  organizations uncertain.
- There is a lack of coherence between the layers in the Hungarian spatial planning and calls for applications are occasionally.
- There is a lack of communication between the non-governmental, professional and state organizations in Hungary.
- 6. The French settlement associations can be regarded as successful in the point of the approach, the willingness of cooperation, task management, local and regional development (etc.). They are determined by the followings:
- a well-defined common interest beyond the financial one, and their regular revision
- the determination of an adequate spatial level according to the goals of spatial development and task management, and the content coherence of functional operation. It means the coherence of two approaches: more "strict" control of public tasks and services, and the freedom in project-

based landscape-regional cooperation. The state supports the coherence of these approaches on regional basis. To reach this goal, the state supports that the area of settlement co-operations of the highest extent (urban regional communities and the agglomerated regional communities) equals the area of the official INSEE<sup>3</sup> delineation of urban regions representing the real spatial relations well.

- The supporting attitude of the state in the fields of legal regulation and financing initiated the settlement and inter-municipal association systems using internal resources that made the fundaments of a culture of the long-term common thinking and planning.
- The regulation created the work organizations with interdependent legal entity by the "inter-municipal public organization" (EPCI) cooperation form which can have own revenue tax –, thus, a framework for the interdependent operation from the settlement, strengthening their professional background and its relative interdependency from the local politics.
- In France the operable inter-municipal associations based on local geographical, economic and social features form a coherent spatial planning system. Due to the legal framework of the regional planning implementation can be controlled and state and EU funds are joined to the local planning documents.

Based on the literature in the field it can be drawn and the French experts also point at: the resource and the financial efficiency of the regional association system is questionable, however, its effectivity can not be measured by only economic indexes.

7. In accordance with the possible future of the Hungarian multi-purpose association of municipalities, three possible future models were outlined, in which two factors played determinant role: the previous settlement cooperational culture and the features of settlement structure deterministic for the association.

**Version A:** the multi-purpose associations preserve their organizational frameworks, since the remaining normative and the project resources are enough to be worth maintaining them. They will be determined by the settlement-level redistribution of resources. This version will be basically deterministic for those small and medium settlement associations where there is no involved centre settlement with significant economic role or

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<sup>&</sup>lt;sup>3</sup> Institut National de la Statistique et des Études Économiques – National Institiute of Statistical and Economic Research

which will not be entitled for extra project resources due to disadvantaged circumstances.

**Version B**: the micro-regional association has a centre settlement having significant economic base, and due to its position it is worth maintaining the association for public functions, their development, lobby and project possibilities. The expert background can maintain their previous group in an independent organizational form (e.g. Ltd).

**Version C:** the renewal of disadvantaged associations (e.g. LHH) can be supported, if there will be resources opened for reapplication on this basis. Among such associations there are the ones which are promoted by their previous relation and expert background, developed application routine that are able to be repositioned.

To sum up, it is obvious that local identity, community strength, a stable financial background (e.g. such a state normative like DGF in France) and an "independent" expert working group can basically determine the maintenance and development possibilities of multi-purpose associations. The current regulation significantly mitigated the financial background, and terminated the "quasi" independent organizational frameworks. It is a question if "tradition" and "co-operation culture" of the associations are strong enough to renew by the help of the developed experts in the new EU financial period.

#### Possible directions for further research

The dissertation indicates further questions, based on which further research on this topic can be revealed:

- The realization and effects of the planned reform of public administration in France can have useful experiences in the future.
- It would be worth revealing the solutions and exact practices of project and financing system, furthermore the investigation of good examples in the French rural development by the help of case studies.
- The further assessment of applicability of "zonal method" for Hungary can also have interesting experiences and results.
- From the viewpoint of the Hungarian conditions, the assessment, evaluation and summary of experiences of the past twenty years of settlement associations would be highly important.

- It would be interesting to reveal the situation of multi-purpose settlement associations for the whole country and to monitor to which extent they fit to the described future models on certain parts of the country.
- In connection with the micro-regional co-operations, the comparative study of the French and Hungarian LEADER Local Action Groups and the assessment of the role of landscape ("pays") co-operations in LEADER could have interesting results.

#### List of publications related to the dissertation

KOROM A. – HORNYÁK S. 2014: A városi és a vidéki terek lehatárolásának statisztikai alapjai Franciaországban. *Területi Statisztika* 54 (4): 360-375.

KOROM A. 2014: The Role of Micro-Regional Cooperation in Spatial Planning. The Case of France. *Journal of Settlements and Spatial Planning* – *under publishing* 

KOROM A. – HORNYÁK S. 2014: A vidék kutatása és a vidék földrajz jellegzetességei Franciaországban. *Településföldrajzi Tanulmányok – under publishing* 

KOROM A. 2009: Serbannes, egy francia falu fejlődési keretei. In: BAJMÓCY P. – JÓZSA K. – PÓCSI G. (szerk.): *Geográfus Doktoranduszok IX. Országos Konferenciája*. Szegedi Tudományegyetem Gazdaság- és Társadalomföldrajz Tanszék, Szeged. CD kiadvány

KOROM A. 2008: A vidékfejlesztés stratégiája Franciaországban. In: OROSZ Z. – FAZEKAS I. (szerk.): *Település Környezet*. Kossuth Egyetemi Kiadó, Debrecen. pp. 205-210.

KOROM A. 2007: A francia kistérségi szint értelmezése a saint-louis-i kistérség példáján. In: SZÓNOKYNÉ ANCSIN G. (szerk.): *Határok és Eurorégiók*. Nemzetközi Földrajzi Tudományos Konferencia Kiadványa. Szegedi Tudományegyetem TTIK, Gazdaság- és Társadalomföldrajz Tanszék, Szeged. pp. 227-232.

KOROM A. 2007: Definition of Rural Areas in France. In: KOVÁCS Cs. (szerk.): *From villages to cyberspace*. (Falvaktól a kibertérig. Ünnepi kötet Mészáros Rezső akadémikus 65. születésnapjára). SZTE TTIK Gazdaságés Társadalomföldrajz Tanszék, Szeged. pp. 341-348.

# Other publications

KARANCSI Z. – KOROM A. – HORNYÁK S. – OLÁH F. – SZALMA E. 2012: A Tisza Csongrád-megyei szakaszához kapcsolódó turizmusföldrajzi adatbázis kialakítása. In: FAZEKAS I. – SZABÓ V. (szerk.): *A környezettudatos települések felé: III. Települési Környezet Konferencia*. Meridián Alapítvány, Debrecen. pp. 240-245.

HORNYÁK S. – KOROM A. 2012: Körmünkre égett feladatok, avagy gondolatok Szentes város tanyáinak jelenéről és lehetőségeiről. In: KARANCSI Z. – OLÁH F. (szerk.): *Szentes Város komplex külterületfejlesztési koncepciója*. SZTE JGYPK ATTI Földrajzi és Ökoturisztikai Tanszék, ATI-VIZIG, VE-GA Szövetség, Szentes Város Önkormányzata. Szeged (Kapitális Nyomdaipari és Kereskedelmi Kft. Debrecen) pp.121-131.

HORNYÁK S. – KOROM A. 2012: A Fehn települések történeti földrajza. In: BOROS L. – JÓZSA K. (szerk.): *Geográfus Doktoranduszok XII. Országos Konferenciája*. Szegedi Tudományegyetem TTIK, Gazdaság- és Társadalomföldrajz Tanszék, Szeged. 190 p., CD kiadvány

KARANCSI Z. – KOROM A. – HORNYÁK S. – OLÁH F. – SZALMA E. 2012: Településkép vizsgálatok különböző alföldi településtípusokon. In: FAZEKAS I. – SZABÓ V. (szerk.): *A környezettudatos települések felé. III. Települési Környezet Konferencia*. Meridián Alapítvány, Debrecen. pp. 284-285.

KOROM A. – HORNYÁK S. 2012: A tanyavilág fenntartható fejlesztésének keretei Szentes példáján. In: NYÁRI D. (szerk.): *Kockázat – Konfliktus – Kihívás: A VI. Magyar Földrajzi Konferencia, a MERIEXWA nyitókonferencia és a Geográfus Doktoranduszok Országos Konferenciájának Tanulmánykötete.* SZTE TTIK Természeti Földrajzi és Geoinformatikai Tanszék, Szeged. pp. 406-416.

KOROM A. – HORNYÁK S. (2010): Szentes város külterületének változásai. V. Magyar Földrajzi Konferencia kiadványa, Pécs, 2010. november 4-6. – Under publishing

KOROM A. – KOROM P. 2008: A Szentes városi földárok és mirhó rendszer rendezése, mint kék és zöld mikrohálózat fejlesztés. In: OROSZ Z. – SZABÓ V. – MOLNÁR G. – FAZEKAS I. (szerk.): *IV. Kárpát-medencei Környezettudományi Konferencia II. kötet*. Meridián Alapítvány, Debrecen. pp. 321-327.

KOROM A. – HORNYÁK S. 2007: Az Ems völgyének sajátos településhálózata. In: SZÓNOKYNÉ ANCSIN G. – PÁL V. – KARANCSI Z. (szerk.): *A határok kutatója. Tanulmánykötet Pál Ágnes tiszteletére.* SZTE TTIK, Gazdasági- és Társadalomföldrajz Tanszék – JGYPK, ATTI Földrajzi és Ökoturisztikai Tanszék közös kiadványa. Magyarságkutató Tudományos Társulat, Szeged – Szabadka. pp. 173-180.