

**DIFFERENT CARTOGRAPHIC VISUALIZATIONS  
OF SPATIAL STRUCTURE  
IN THE DOCUMENTS OF HUNGARIAN SPATIAL POLICIES**

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## **Abstract**

In Europe the documents of spatial planning usually involve a symbolic representation of the territory. In the practice of Hungarian spatial policies this method is also used but there are significant differences in the use of cartographic visualisations of spatial structure in strategic spatial planning. The aim of this paper is to analyse the different forms of spatial structures in Hungarian regional planning documents. The results show that on the one hand some of the spatial forms are scientific, but there are simple metaphors as well without serious basis, on the other hand the main cause of difference comes from the different views of spatial structure: this structure is composed of spatial objects (geographic areas, built objects etc.) or this is a regional inequality of social-economic indicators.

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## **Keywords:**

Hungarian regions, spatial structure, regional policy

## **1. Introduction**

In most traditions of spatial planning in Europe, planning policy documents involve a symbolic representation of the territory in the form of icons, diagrams, and maps. There are, however, significant national and regional differences in the use of cartographic visualisations in strategic spatial planning in European countries (Dühr 2004). In the practice of Hungarian spatial policies this method is also used and there are significant differences in the use of cartographic visualisations of spatial structure in strategic spatial planning. The aim of this paper is to analyse the different forms of spatial structures in Hungarian regional planning documents.

## **2. The notion of spatial structure in the social sciences in Hungary**

The spatial structure is a very popular notion in Hungarian territorial researches and regional development, but the authors have different opinion about this notion. It is based on the different definitions of spatial structure. It seems that there are three groups of definitions on the basis of where the stress in the definition is (Szabó 2008):

a) elements and their positions (e.g. Zoltán 1984, Kőszegfalvi 1985, Nemes Nagy 1998, Mészáros 2000)

b) elements (e.g. Krajkó 1989, Baráth 1987, Benedek 2000, Bodó 2005)

c) positions of elements (e.g. Bartke 1989, Faragó 2004).

I share the last one, because I think this is the main difference between space (elements and positions) and spatial structure (positions).

If we analyse the Hungarian territorial research works, where the spatial structure is in the centre, we find that there are two opinions of spatial structure (Szabó 2008):

a) the spatial structure is in connection with the elements of the social-economic geographical environment (elements, networks, connections, e.g. settlements, transport networks, land use etc.); it is mainly characteristic of geography, area management (raumordnung), physical planning.

b) the spatial structure is in connection with quantitative, qualitative differences between regions (e.g. regional differences of the GDP, regional inequalities of GDP per capita); it is mainly characteristic of regional science, regional development (regionale Entwicklung).

Sometimes they are together in the researches.

These were the main conclusions of my previous researches. And there was the question what about the Hungarian spatial policies, how the spatial structure appears.

## **3. The usage of spatial structure in Hungarian spatial policies**

The spatial structure is important in spatial policies: not only the inside structure (of society, economy) but the spatial structure influences the (effectual) operation of society and economy. In Hungary there are different opinions about the spatial structure in area management and in regional development. *Figure 1.* shows the spatial structure of Hungary created by the area management office. The elements are the types of land use (forest, agriculture and so on), the settlements, the networks of energy and transport, the rivers, lakes, and infrastructure. It is a general map. *Figure 2.* shows the spatial structure of Hungary created by the Regional Development Office. Spatial structure means the regional development inequalities in case of the small regions. (dynamical developing, developing, closing up, stagnant, underdeveloped small regions). It is a thematic map.

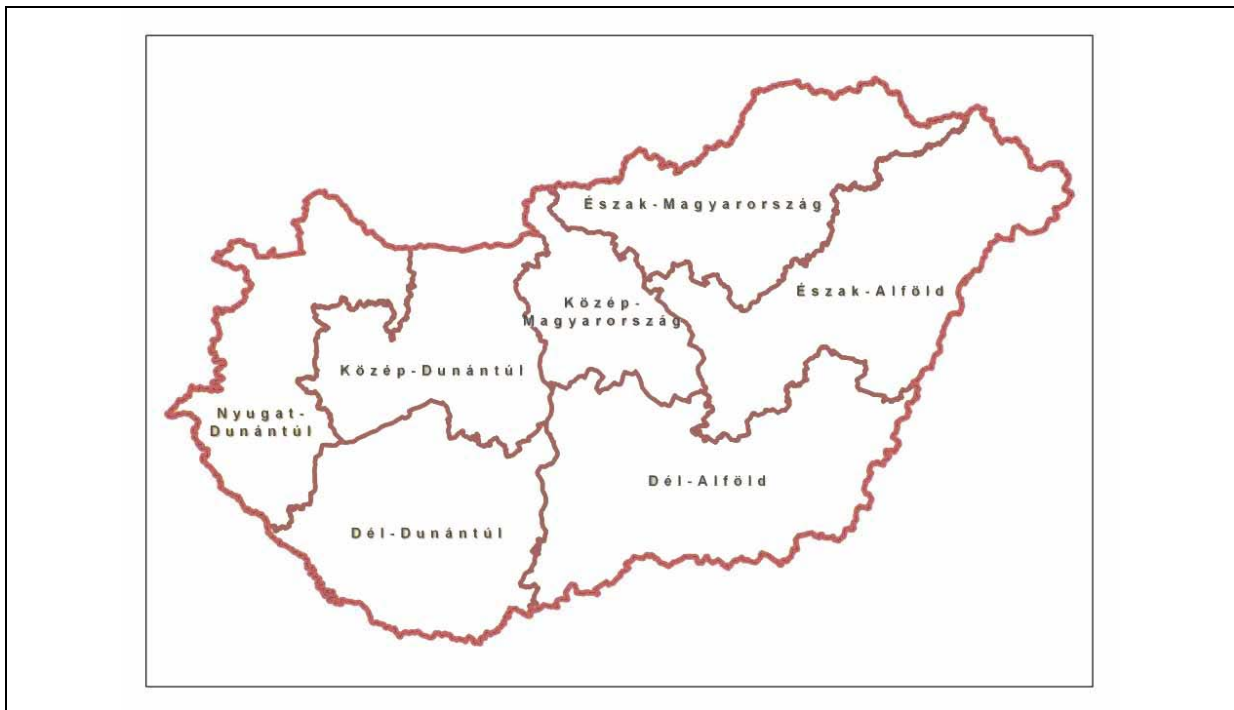


Is there effectual working process if there are two different opinions and maps? There are two separated parts of spatial policies. There is a possibility: we need one territorial planning (document) which connects these two parts (physical and social-economic planning). And the usage of térszerkezet (spatial structure) is recommended for the területfejlesztés (regional development), and the usage of területszerkezet (territorial structure) is recommended for the területrendezés (area management).

### 3. The usage of spatial structure in Hungarian regional policy

The other problem is that in regional development there are also different opinions about the spatial structure. In support of this statement we can examine the cartographic visualizations of spatial structure in different Hungarian regional development documents.

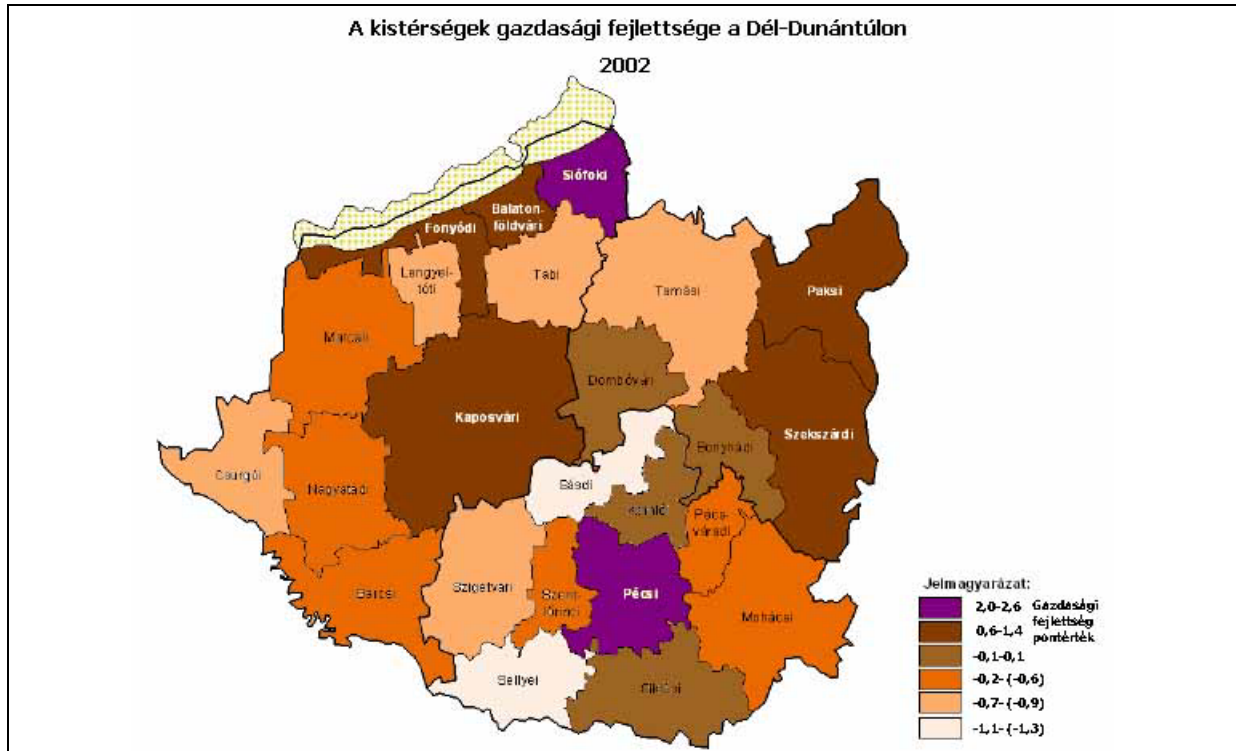
In Hungary there are 7 NUTS2 regions (*Figure 3.*). We can examine the development documents of the regions (the last documents which were made by Regional Development Agencies), and we focus on the first part of these documents, the “assessing the state”.



*Figure 3.* The NUTS2 regions of Hungary (HU10=Közép-Magyarország /Central Hungary/, HU21=Közép-Dunántúl /Central Transdanubia/, HU22=Nyugat-Dunántúl /West-Transdanubia/, HU23=Dél-Dunántúl /South-Transdanubia/, HU31=Észak-Magyarország /North-Hungary/, HU32=Észak-Alföld /North Hungarian Great Plain/, HU33=Dél-Alföld /South Hungarian Great Plain/)

## Dél-Dunántúl

The spatial structure (the notion) is not mentioned in the text. (We paid attention to the synonyms, too.) In this document there are mainly thematic maps (40%). One map is close to the spatial structure (*Figure 4.*): on the map there is the complex economic development level of the small regions (complex indicator which is based on 21 economic indicators). (The purple and the brown colours show the developed small regions.)



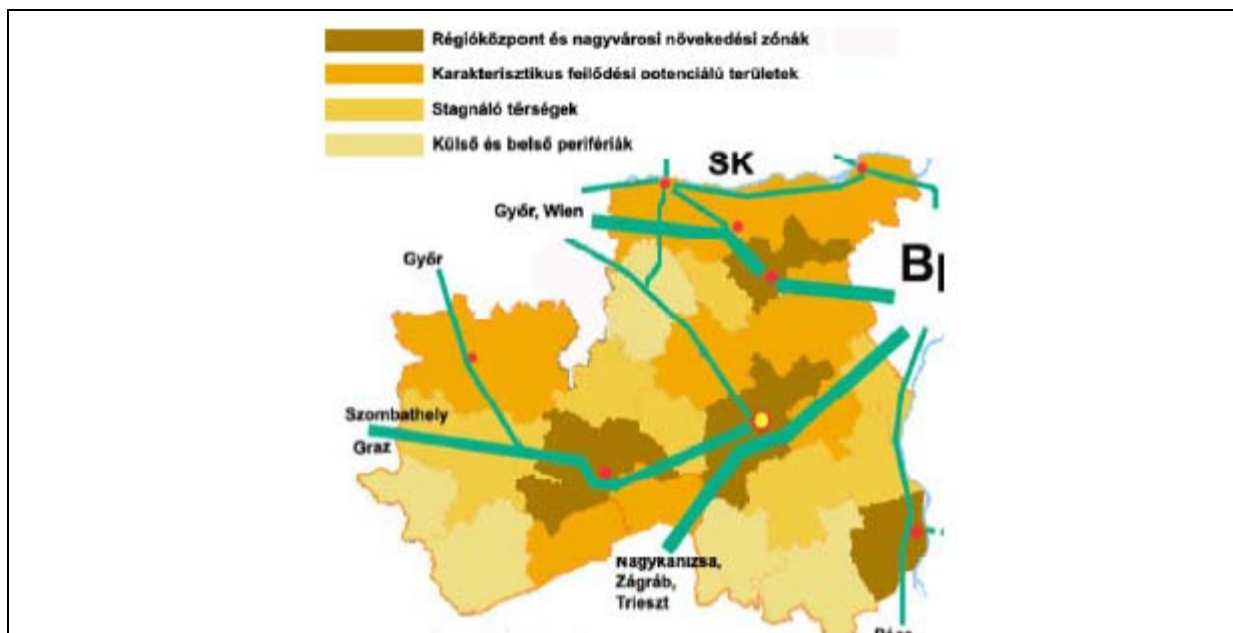
*Figure 4.* The economic development level of small regions (Source: Dél-dunántúli helyzetelemzés, 2005)

## Közép-Dunántúl

In the document of Közép-Dunántúl (Central Transdanubia) the spatial structure is mentioned twice. There are only few figures (7), but two of them are close to the spatial structure: two generalized figures (which are based on maps). (There are no values, only names.) In the first figure (*Figure 5.*) there are types of small regions: the central part, regional sub-centres, developing small regions, small regions with tourism, stagnant industrial small regions, small regions with agriculture. Each light bulb shows a university or college. The second figure (*Figure 6.*) shows four types: the centres of the regions (with a big city), developing regions, stagnant regions, and periphery (inside, outside). And we find axes and poles (without legend).



*Figure 5.* The economic categories of small regions (Source: Közép-dunántúli helyzetelemzés, 2005)



*Figure 6.* The categories of (small) regions (Source: Közép-dunántúli helyzetelemzés, 2005)



## Dél-Alföld

This region has a new development plan, but in this document there is no assessing the state, we can find a description of the region only in the previous document. In this paper there are a lot of references (34) to spatial structure. (The problem is that some figures are missing from the document.) There are two generalized figures. The first shows the economic spatial structure (*Figure 8.*). It is a complex picture: there are development zones (based on agriculture, industry, services), centres, and development axes, industrial parks, university/college, R&D centres, etc. The second (*Figure 9.*) one shows the hierarchy of cities and settlements and their connections, and shows the types of small regions (complex underdeveloped, and underdeveloped in social or economic features). In these two figures the present state and the future (the elements of development plan) are mixed.

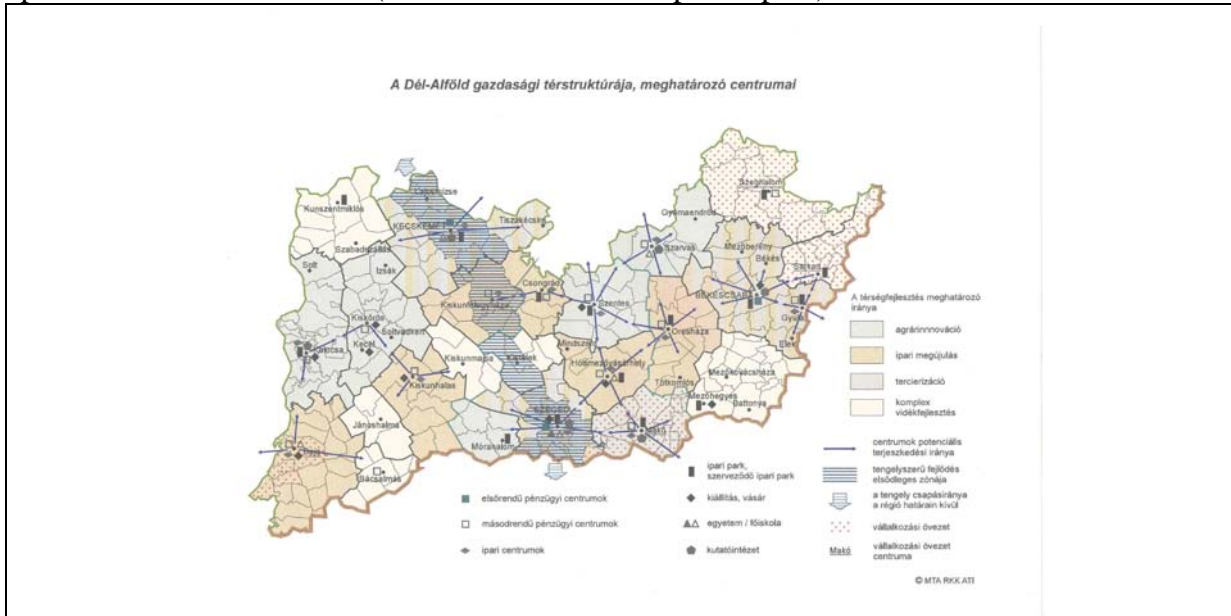


Figure 8. Economic spatial structure, centres (Source: Dél-alföldi helyzetelemzés, 1998)

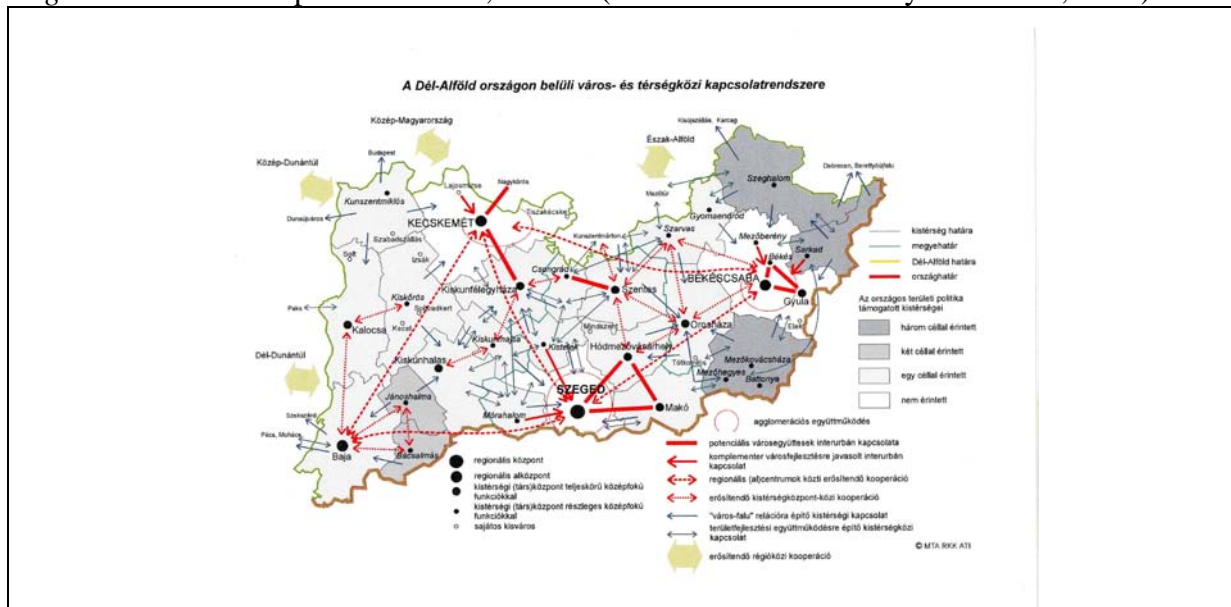


Figure 9. Connections between cities and small regions (Source: Dél-alföldi helyzetelemzés, 1998)

## Észak-Alföld

In the document of Észak-Alföld the spatial structure is mentioned only four times, and there are few figures (9). Three of them are generalized figures, close to the spatial structure. The first (*Figure 10.*) shows the types of small regions (urban, rural, and the hierarchy of settlements). The second (*Figure 11.*) shows the types of settlements (centres, sub-centres etc.). The third (*Figure 12.*) shows the cities and the transport corridors between them.

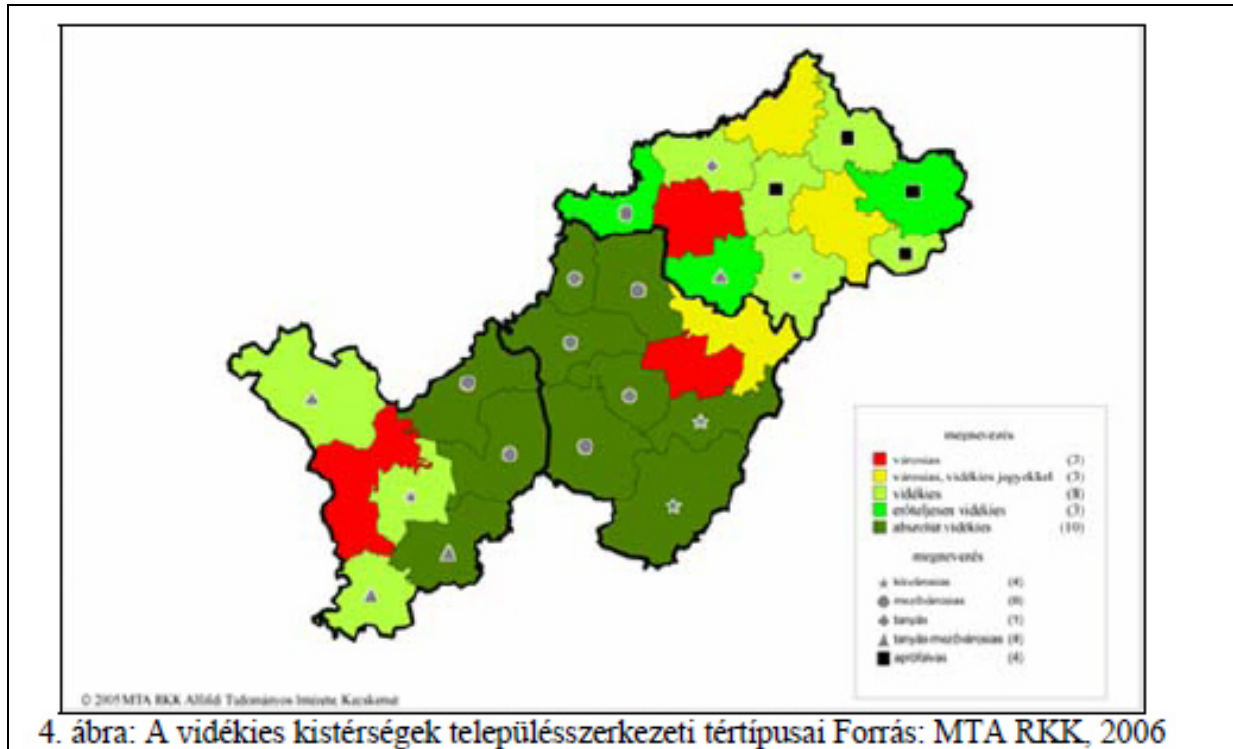


Figure 10. Types of small regions (urban, rural), hierarchy of settlements (Source: Észak-alföldi helyzetelemzés, 1998)

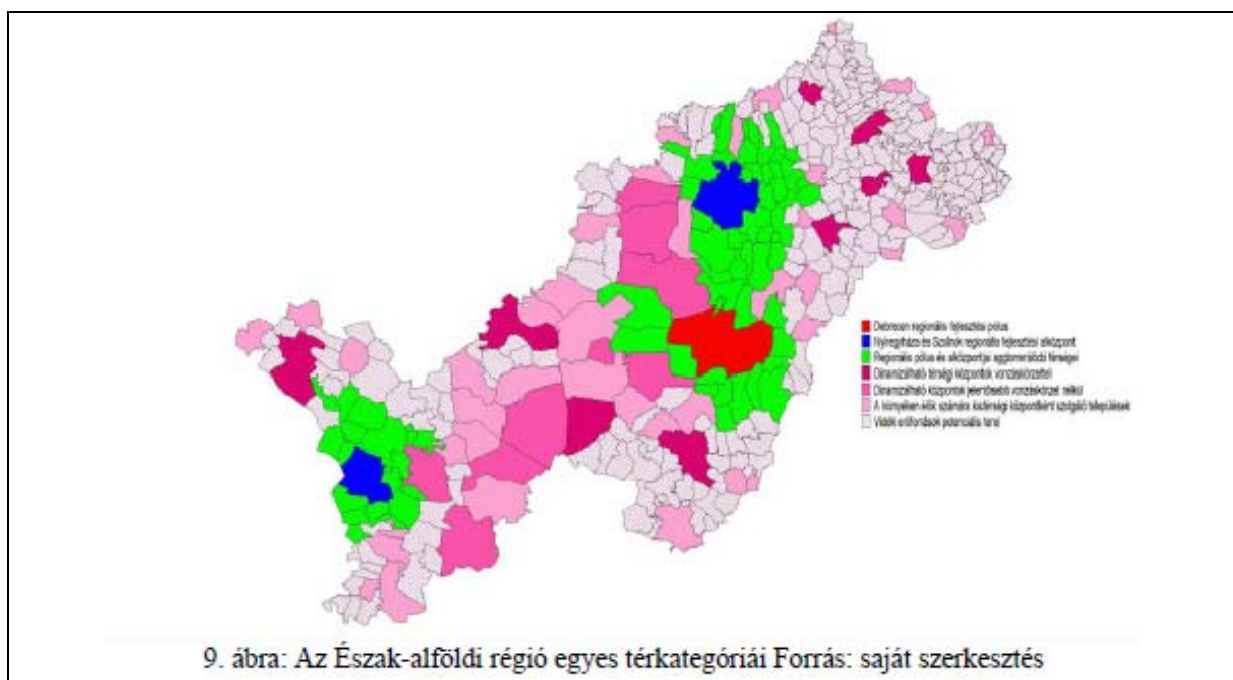


Figure 11. Types of settlements (Source: Észak-alföldi helyzetelemzés, 1998)

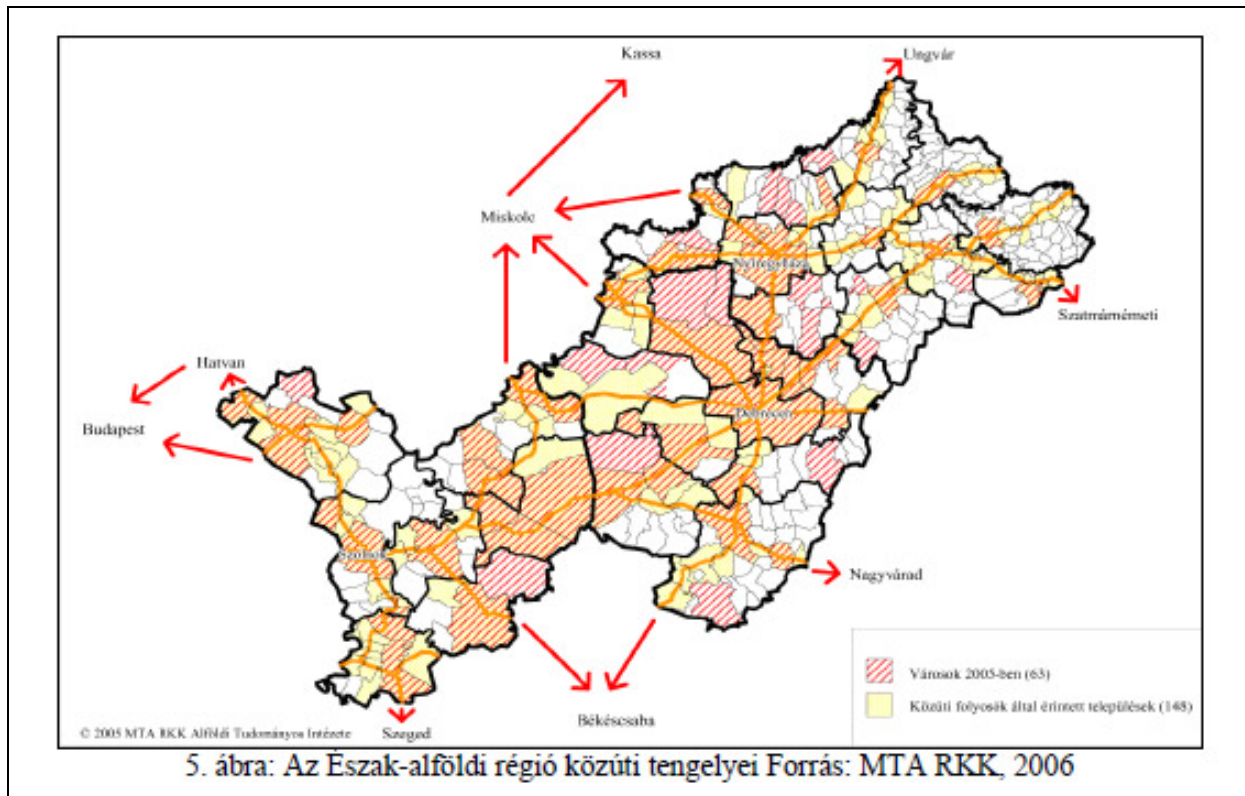


Figure 12. Road axes (Source: Észak-alföldi helyzetelemzés, 1998)

## Észak-Magyarország

The document is very simple and poor in figures of the region. There is only one map of the region, it shows the small regions of Northern Hungary (*Figure 13.*). In the document there are mainly thematic maps of the country (90%). Spatial structure is not mentioned, and only one country map (*Figure 14.*) is close to the spatial structure about the types of small regions (dynamic developing, developing, closing up, stagnant and small regions lagging behind)



Figure 13. The small regions (Source: Észak-magyarországi helyzetelemzés, 2005)

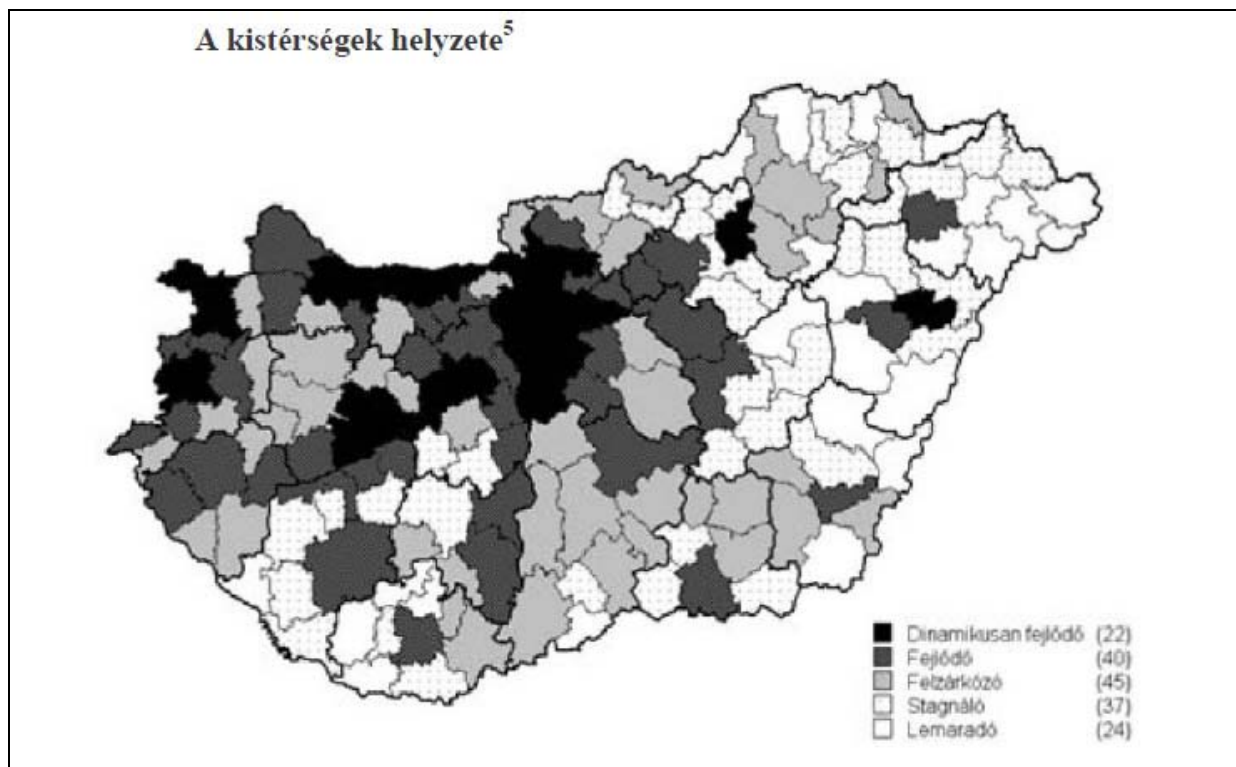
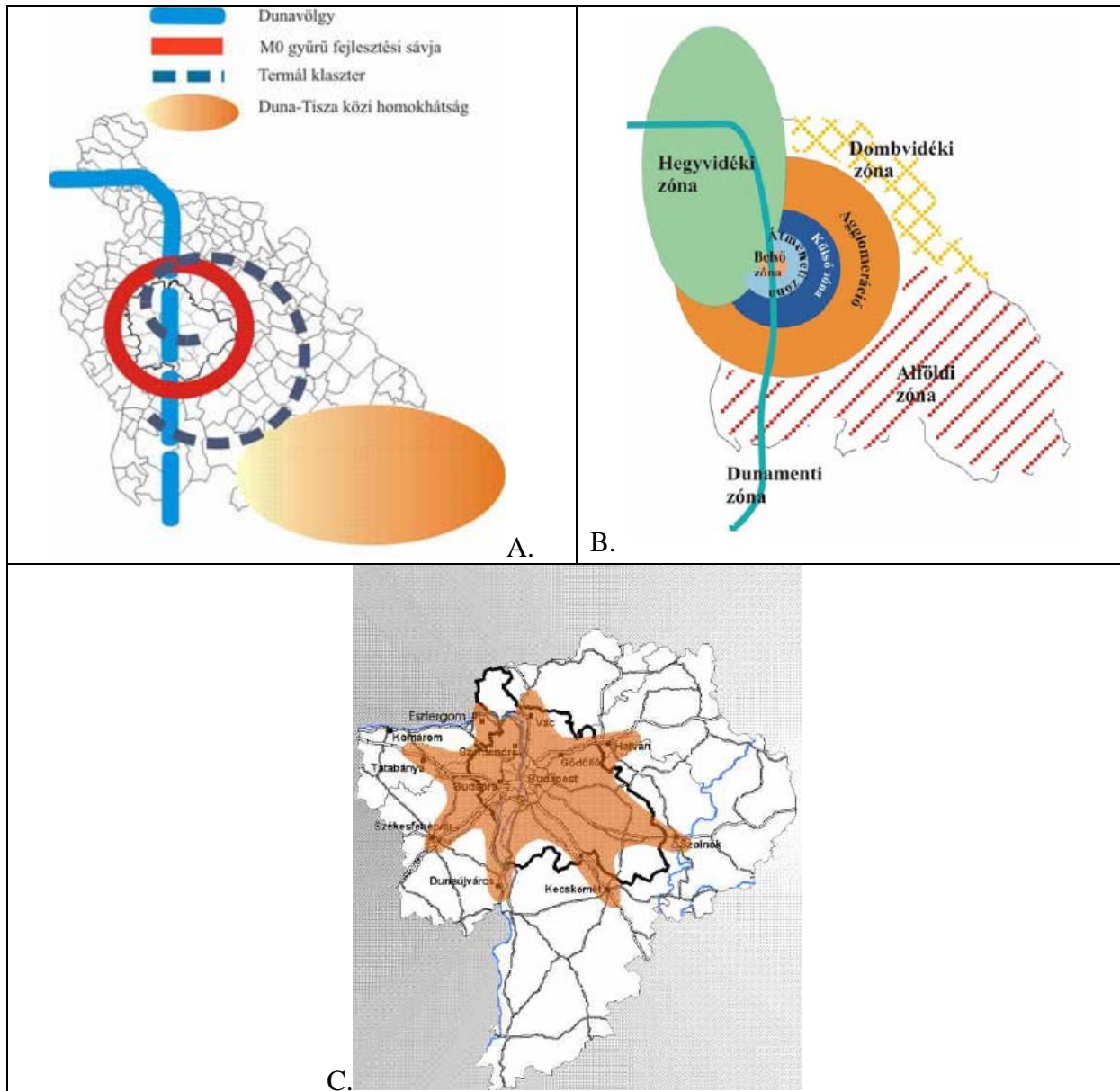


Figure 14. The positions of small regions (Source: Észak-magyarországi helyzetelemzés, 2005)

## Közép-Magyarország

In the text of the document there are some (11) references of spatial structure. We find only a few figures, but three of them are generalized figures of spatial structure (*Figure 15.*). A. shows an interesting mixture of the river, the M0 motorway, the thermal cluster and a small problematic land. In B. there are types of zones (mountains, plain, hills), and the structure of Budapest and its agglomeration. The third (C.) shows Budapest as the centre of gravitation.



*Figure 15.* A. The principle of the territoriality; B. The territorial structure; C. The economic and social relations (Source: Közép-magyarországi helyzetelemzés, 2005)

Table 1. summarizes the types of visualizations. In the documents there are very different cartographic visualizations, and it is true for the cartographic visualization of spatial structure. There is no general pattern.

	Maps (%)			Generalized figures (%)	Sum total (%)
	Europe	Hungary	Region		
DD	0	39	55	7	100
NyD	15	63	22	0	100
KD	0	29	43	29	100
DA	0	33	33	33	100
ÉA	0	95	5	0	100
ÉM	0	0	40	60	100
KM	0	0	57	43	100

Table 1. Different cartographic visualizations in the regional development documents

We can establish that there are different figures of spatial structures. We find thematic maps of regional development with statistical data or only with names of category (developed, underdeveloped), and we find generalized figures and their combination, and sometimes they are combined with poles and axes and so on. The main reasons are that there is no general definition for the spatial structure and in regional development there are many professions (geographers, economist, architect, sociologist etc.) with many opinions, and within one profession there are a lot of different opinions as well, and these people make the documents. Maybe harmonizing would be expedient. In social sciences it is not a problem if there are different opinions, but in regional development maybe it weakens the efficiency. Because if we put together the spatial structures of the 7 regions, we get this map: Figure 16. This is a mixed picture.

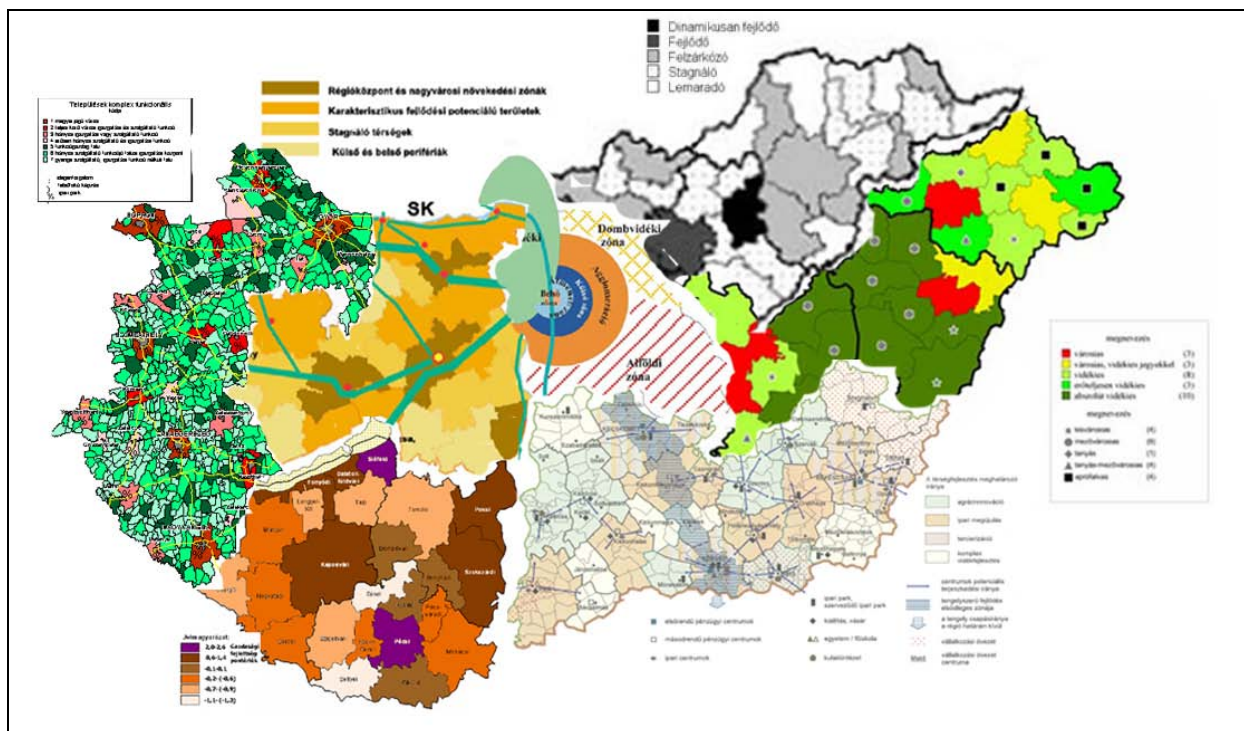


Figure 16. The “summarized” spatial structure of Hungary

#### 4. Summary

Our results show that on the one hand some of the spatial forms are scientific, but there are simple metaphors as well without serious basis, on the other hand the main cause of difference comes from the different views of spatial structure. And these are only seven regions, and we have 19 counties plus Budapest, and we have 174 small regions, and they have spatial structures, too... The question is if it is a good way to make figures of spatial structure without general pattern? Maybe not.

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Source of regional development plans:

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- Közép-Dunántúl: <http://www.kdrfu.hu>
- Nyugat-Dunántúl: <http://www.westpa.hu/cgi-bin/westpa/index.cgi>
- Dél-Alföld: <http://www.del-alfold.hu/>
- Észak-Alföld: <http://www.eszakalfold.hu>
- Észak-Magyarország: <http://www.norda.hu/>
- Közép-Magyarország: <http://www.kozpontiregio.hu/>