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Differentiating between Rural Areas : Indicators and Typologies

Dr. Samuel DEPRAZ (*University of Lyon – Jean Moulin*)

Summary:

The study of regional disparities on the European scale is often conducted with the NUTS3 or NUTS2 statistical units of the Eurostat statistical office. Such a reading scale is too loose to allow a precise analysis of the qualitative differentiations between rural areas. This paper aims at suggesting a methodological re-positioning (a) on an efficient statistical definition of rurality, and (b) on the proper scale of the analysis of rurality, in order to isolate rural areas among global statistical tables and to build qualitative typologies on the current evolutions of the Central European Countryside. The example of Hungary will then be used as a concrete case-study.

The study of regional disparities on the European scale is often conducted at a large level of analysis, that is the NUTS3 or NUTS2 statistical units of the *Eurostat* statistical office. Such a methodological choice allows indeed a comprehensive approach of the European continent and is nourished by a very large panel of statistical indicators that have been harmonized for the use of the European institutions. Moreover, all this NUTS3 and NUTS2 data is, most of the time, freely disseminated by national statistical offices.

However, such a reading scale will generally result into a basic statement – that is, the well known discrepancy between urban and rural areas – simply because this economic gap is the most accurate in the European geography. In contrary, the finer and qualitative differentiations between two rural areas will be completely obliterated behind the dominant features and trends of the biggest urban poles that lead most of the regional economies.

How thus is it possible to measure, or even to point out, the specific evolution of the rural areas in Central and Eastern Europe? The European Countryside, representing approximately 90% of the continental surface and still the quarter of its population¹, is even more important in Central and Eastern Europe, where many areas have encountered until now a less vivid metropolization process and where a significant part of the rural population still works in agriculture (see *Table 1*).

Are there *internal differentiations* between rural areas, beyond any quantitative rural/urban oppositions? This paper thus aims at suggesting a methodological re-positioning (a) on an efficient statistical definition of rurality, and (b) on the proper scale of the analysis of rurality in order to isolate rural areas among global statistical tables and to build qualitative typologies on the current evolutions of the Central European Countryside.

The basic position of our research team, led by Pr. Marie-Claude Maurel at the CEFRES Institute (Prague)², lays indeed on the idea that there have been many different “trajectories” in the evolution of Central European rural areas since the systemic change. However these numerous situations do not always result in measured disparities, but rather in qualitative differentiations that can be encompassed only through a precise typological approach. The preliminary methodological reflexion of this research project will be explained here, with the example of Hungary as a concrete case study.

¹ After the European Commission calculations: EUROPEAN COMMISSION (2006), *Rural development in the European Union, Statistical and Economic Information Report*, DG Agri, 401 p.

² The common results of this research project will be found in: MAUREL M-C., LACQUEMENT G. (Eds) (2007), *Agriculture et ruralité en Europe centrale*, « Aux lieux d’être » editions, Paris.

	rural population	rural area
Czech Rep.	30%	83%
Estonia	32%	98,5%
Hungary	43,3%	88,1%
Lithuania	57%	98,6%
Latvia	34,3%	98,3%
Poland	40,3%	90,5%
Romania	46,3%	93,2%
Slovakia	30%	76,7%
E.U. (25)	26,1%	86,7%

Table 1: the importance of rural areas in Central and Eastern Europe
Source: European Commission, 2006.

1. Which Definition for Rural Areas ?

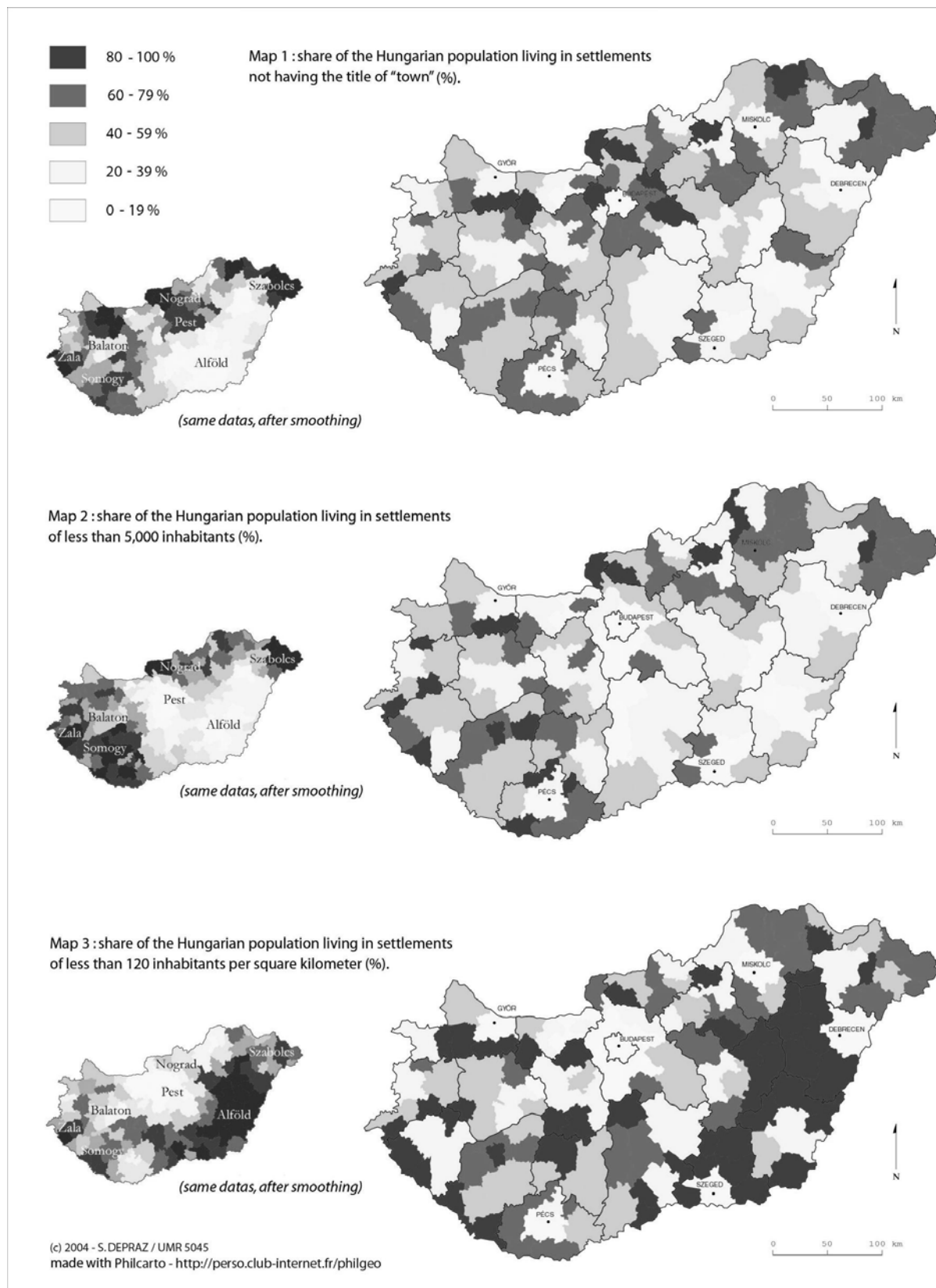
The first methodological issue that the scientific approach on rurality has to face is the construction of the subject of its investigation itself. The definition of rural areas indeed significantly varies from one country to another. Consequently, one can hardly compare the European rural areas without any precise common definition.

In Hungary for instance, the official definition of urban and rural areas is a legacy from the Socialist era and depends on a statutory distinction between “urban settlements” – that is the localities that have been entitled with an “urban” status – and “rural settlements”, the ones that have no such title. This distinction will be theoretically built on the examination of the urban functions of the settlement and a minimal threshold of 5,000 inhabitants. But many exceptions can be found, such as the deliberate promotion of certain villages during the socialist times, so that some “cities” total 1,400 inhabitants when some rural settlements will be as big as 12,000 inhabitants, still not having been promoted until today as a city. Therefore, such an administrative definition is quite heavy to update and does not well reflect the current territorial structures of the country. Many periurban settlements, whose public utilities and economic functions are provided by the central city, will then not be included in the official urban agglomerations. The areas surrounding Budapest, for instance, appear among the most “rural” areas of the country, which one can seriously doubt (map 1).

If one compares the official definition with another one, such as the 5,000 inhabitants threshold as it exists in the Czech Republic or Slovakia for instance, a different map of the Hungarian rurality will be obtained, that will properly exclude, this time, the immediate periurban belt around Budapest and the other main cities (map 2).

The picture is, again, completely different if one chooses a last criterion, inspired by the reflections of the *Rural Commission* of the *International Geographic Union* during the seventies, with G. Enyedi as a chairman, which suggests to choose density to define rurality.

With the maximal threshold of 120 inhabitants per square kilometer, the extreme statistical values remain the same. However, the intermediate rural areas appear to be inverted compared with the former maps. The northern Hungarian hills, often densely populated with a tight network of small villages, were more “rural” than the Hungarian Great Plain (the *Alföld*); now it is the contrary. The *Alföld* is indeed the biggest agricultural region of Hungary and is very sparsely populated, except in some big villages that concentrate the basic economic functions for the surroundings areas and that are characterized by low houses and the continuing predominance of agriculture. This very specific morphology of the Hungarian Great Plain made it an “urban” region for the official statistics, since every big village could be promoted as an “urban” settlement without having most of the features of a city; this is the “*under-urbanization*” of the Great Plain, following Enyedi (map 3).



Maps 1, 2 and 3: various possible definitions of the Hungarian rurality on the micro-regional level (Kistérség, LAU1 level) – Datas: KSH, 2005.

Thus the resetting of the Hungarian rural areas through the change of definitions has replaced the Alföld in the heart of the analysis. It also proves that the reflection on the definitions of rurality is not only a preliminary formality, but an essential questioning; as a consequence, one shall be very careful that the measured disparities between European rural areas are not actually the result of the differences between the definitions of rurality.

2/ The Definition of Rurality after the OECD

The official criteria used to define rurality, as shown in the Hungarian example, can be indeed quite numerous: total of the agglomerated population, density, number of commuters between towns and countryside, multi-criteria typologies, and so on. Our research, dealing with the official definitions of 35 European countries (Depraz, 2007) and other scientific comparisons (Ballas and al., 2003; Pfuderer, 2003; Boscacci, 1999), has shown that each European territory will proceed after its social and cultural legacy and define either the towns or the countryside first, either different degrees or a single divide between urban and rural areas, either a local or a regional area, and so on.

So the use of a single and simple definition is all but unavoidable to isolate rural areas among different countries before any further comparison. Such was the ground hypothesis of the working team of the “Rural Development Program” of the OECD, at the beginning of the nineties, in which statistical offices and scientific researchers on rural areas were involved and worked together to build a common statistical framework on rural areas.

Their postulate was that it was necessary to define rural areas, but without giving them any qualitative substance, such as the proportion of agricultural population or the kind of rural economic functions, for instance: this is not definition, but already analysis. Many studies will actually confuse a single delimitation of the study areas with the core of the analysis itself, and will then choose very complicated definitions that are built on the supposed qualities of rural areas. The two aspects are not necessarily linked: a simple, clear definition of rural areas, based on a very easy-to-use criterion, does not get in the way of a detailed territorial analysis; it will rather facilitate it by extracting only the relevant information on rural areas from the whole database (OECD, 1994).

The OECD team chose a single maximal density threshold at the local scale, namely LAU2, with 150 inhabitants per square kilometer. This is an arbitrary number, but statisticians have shown that a number of 100 or 200 inhabitants per square kilometer would not significantly change the share between urban and rural areas in most developed countries, urban units being generally positioned highly above this step, and rural units deeply below³.

The OECD definition is built on a second step where the share of the rural population per region NUTS3 will be calculated after the results of the LAU2 level. This “scalar stacking” allows one to aggregate the overabundant local data in regional averages and will bring an important adjustment factor: one will not have a contrasted and dichotomic vision of local territories, either rural or urban, but a relative and graduated vision of “significantly” or “essentially” rural regions. This regional aggregation is very important to put each settlement in its surrounding context, making implicitly the statement of the existence of relations between territories without any measurement of the intensity of the rural/urban commuting migrations flow (*figure 1*).

This definition has been sometimes criticized for its simplistic appearance. However, it neither lacks a fine understanding of the functioning of rural territories, nor ignores the practical needs of the comparative analysis of the European territories. This OECD approach was finally adopted by the European Commission in February, 2006 as the official calculation basis for the assessment reports of the European Agricultural Common Policy (ACP) of the *General Directorate for Agriculture and Rural Development*⁴.

³ O.E.C.D. (1994), *Territorial Indicators of Employment. Focusing on Rural Development*, « Rural Development Program », Paris, 97 p.

⁴ EUROPEAN COMMISSION (2004), *Proposal for a Council Regulation on support to Rural Development by the European Agricultural Fund for Rural Development*, Bruxelles, « Staff Working Document » n° SEC (2004)931, 57 p. + annexes.

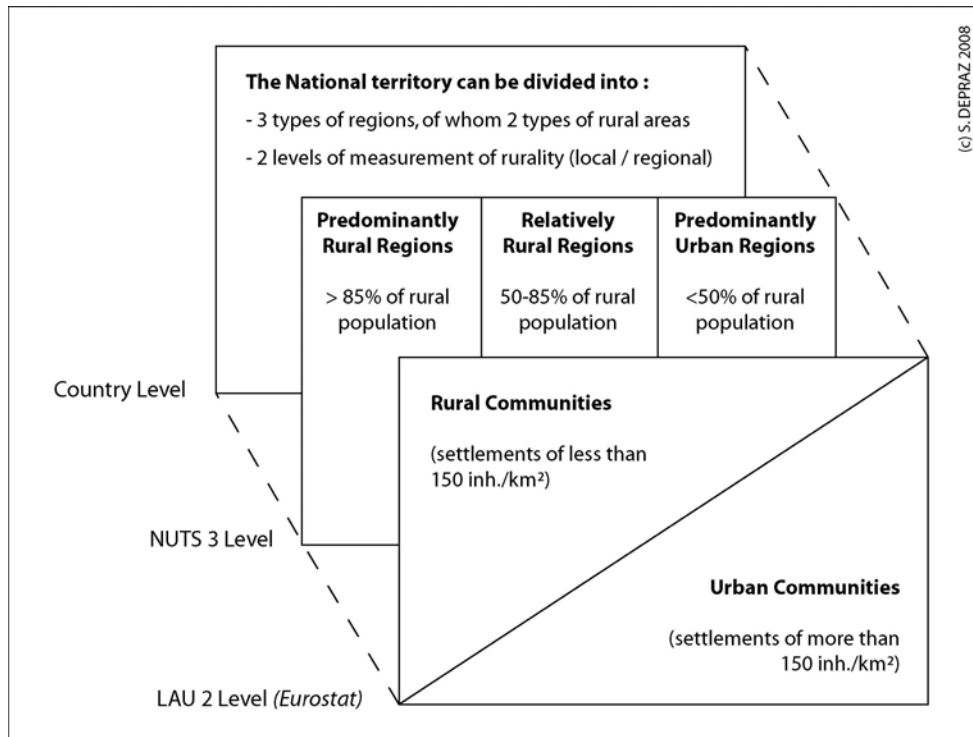


Figure 1: the “scalar stacking” of the OECD definition of rurality – Source: adapted from OECD, 1994 and DUPLESSIS V., BESHIRI R., BOLLMAN R.D. (2002), *Statistics Canada*.

We also chose this approach to define rurality at the Central European scale, using it as a filter to isolate better the rural areas and their specific statistical features.

3/ Scale and Criteria for a Cluster Analysis

The only problem of the NUTS3 level is that such a large frame does not reflect properly the specificities of rural areas, since the NUTS3 units always encompass large regions with small or medium-sized cities at their head. Thus we adapted our study at the *LAU1 level*, that is the micro-regional level of the Hungarian *kistérség*, of the former Czech *okres* or the Polish sub-regions. In Germany however, there is still no complete LAU1 level, so we chose the NUTS3 level of the *Kreis*, which is fortunately quite similar to the others.

Our study process is then rather classical. We linked up a Principle Component Analysis (PCA) with a hierarchical ascending classification, based on a cluster of data on our statistical units, whose comparability and signification was first checked in each country.

We would like to specify now the choice of the indicators that were used in the following analysis (see the contributions of LACQUEMENT G., CHEVALIER P. AND MAUREL M-C. for other examples). The PCA allows to weigh each criterion according to its contribution to the total explanation, and one can exclude the criteria that were too correlated with others; but we do not yield to the temptation of considering this method as an objective one.

On the contrary, we selected our criteria from the very beginning in a subjective way, in order to answer three kind of presuppositions on Central European rural areas:

- the Central European rural areas have experienced an agricultural change with a deepening gap between types of farming and a renewal of the regional specialization; a

first set of indicators will thus deal with agricultural production, farming population and structures in order to specify or amend this point.

- the demographic and social evolution of rural areas remain mostly negative, with a slight or even a strong decline of the number of inhabitants and a poor standard of living; a second set of indicators will gather data on the natural increase, on the migration balance, on the ageing of the population, on the average income, on unemployment and so on, in order to check this presupposition.
- however, the economic structures of rural areas are experiencing a diversification towards a multi-functional activity, with some possible complementarities between sectors. We collected data on the employment in the secondary and tertiary sectors, on the intensity of tourism, on non-commercial or organic farming in order to appreciate the degree of multi-functionality of Central European rural areas.

So the indicators shall validate or mitigate our previous hypothesis, but they do not bring conclusions *ex nihilo* that would magically appear from the data proceeding. This analysis has clearly a demonstrative goal, and not simply an informative one.

Such a methodological choice was also implemented by the recent *Common Monitoring and Evaluation Framework (CMEF)* of the European Commission for the Rural Development policy 2007-2013. The CMEF defines a certain number of indicators that are classified by thematical sections, so that the diagnosis of the situation of the rural areas of the European Union can be assessed following the 3 main axes of the rural development policy⁵:

- improving competitiveness for farming and forestry;
- environment and countryside;
- improving quality of life and diversification of the rural economy.

4/ Cartographic Results : the Hungarian Case-Study

Many regional studies have already been conducted on Central European countries, such as J. Bański's work on Poland, for instance (Bański, 2003). In Hungary, Zoltan Csefalvay studied the question of unemployment and the micro-regional economic development before and after 1989. He showed the overwhelming weight of the north-east / south-west industrial axis and the "three bands" regional planning of the socialist era, favouring the industrial poles of the eastern part of the country (Csefalvay, 1994). This regional division is being now completely inverted on behalf of the north-western part of the country. For its part, Jozsef Nemes-Nagy's work evaluated the winning or losing Hungarian micro-regions through a diachronic typology between 1989 and 2002, based on several economic indicators. His analysis confirms the urban domination with the strength of Budapest and the main economic baselines, that is the Danube valley, the Austrian border and the Balaton basin (Nemes-Nagy, 2001 and 2003).

But those studies do not isolate the specific features of rural areas when, more generally, most of the evaluations are quantitative. On the contrary, our methodology suggested a more detailed view on rural micro-regions, excluding since the very beginning of the study 17 urban micro-regions and focusing then on the restant ones, using the three thematic sets of indicators. The final synthesis can be seen, as for Hungary, on map 4.

⁵ The LEADER initiative, making a fourth axis, is however transversal. See the *Council Decision n°2006/144/EC* of 20 February 2006 on "Community strategic guidelines for rural development" (*programming period* from 2007 to 2013).

Our research could confirm the deepening productive and structural differentiations of the Hungarian agriculture in rural areas, with subsistence-style agriculture in the north-east, agro-industrial cattle breeding in the north-west and big farming in the Great Plain, but also with the reinforcement of a dualistic structure of the farms, the biggest heirs of the collectivism co-existing with the smallest plots of family farming.

The socio-economic indicators have suggested that some rural areas enjoy a large-scale suburban influence in the western part of the country, with a positive migration balance – but still a negative natural increase – and very specific microregions in the north-eastern part of the country, playing the role of a “demographic tank” with a very negative migration balance, a poor economic situation, but still a young population and a slightly positive natural increase, mainly inhabited by the Rom minority.

The diversification of the economy has shown, before all, the sporadic but very selective role of tourism in rural areas: very few touristic areas arise, and the tourist activity remains mono-functional when it is basic, without effective complementarity with other sectors and, sometimes, without positive repercussions on the local society as a whole. Otherwise, the rural diversification is still based on a complementarity between industry and agriculture. Last, diversification through the development of the tertiary sector remains limited to the surroundings of Budapest; otherwise it is a non-basic activity, mostly tied to the need for public and administrative utilities of a rural population with serious economic difficulties.

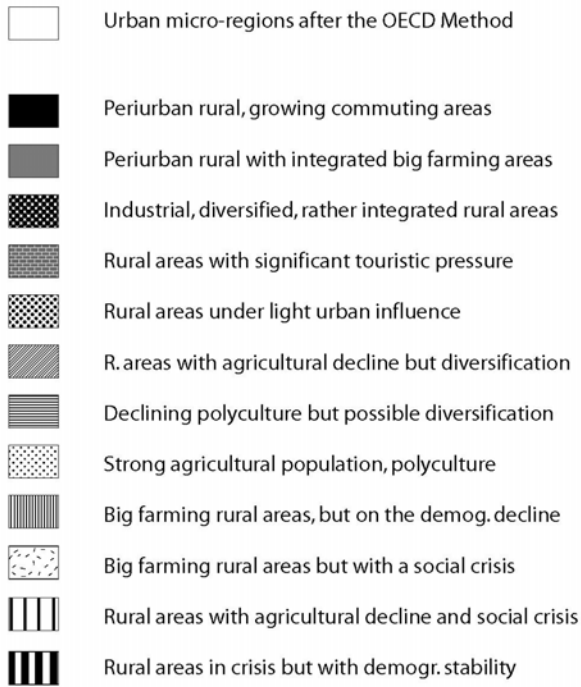
Conclusion

The cluster analysis allowed us to build, through the crossing of the three sets of indicators, a synthesis map of the rural differentiations of the Hungarian territory, with very specific regional trajectories whose characteristics can be summarized as follows:

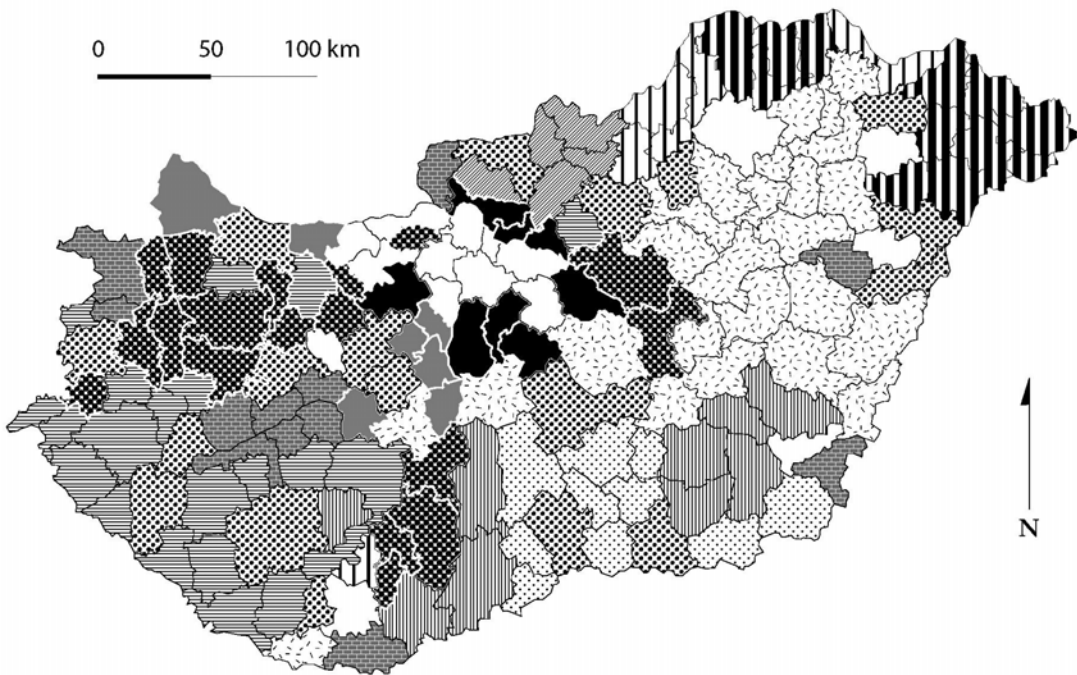
- the remote influence of the economic metropolises and the distance to Budapest are determining factors for the micro-regional development of their rural surroundings;
- a west-east gradual economic decrease reflects the deeper diversification of the rural areas in the western part of the country – but this economic integration is still not followed by a demographic development of rural areas;
- opposite trajectories of the agricultural sector, of the demographic trend and the rural diversification exist: one of these points can be positive, the others can be negative, there is no one-to-one matching between indicators but a large panel of situations. So an approach based on “winning” or “losing” assessments shall suppose *scenarii* where rural regions can be winning *and* losing at the same time, depending on the measured value – that is “differentiations” rather than “disparities” between territories.

Anyways, the strength of local contexts will still invalidate locally the general evolution of a micro-region: beyond the logic of the soil fertility for the agricultural production, beyond the importance of the urban influence on rural areas for the economic development, local actors will still play an important role to temperate, not to say to turn any global constraint to the population’s advantage.

Map 4 : a Typology of Hungarian Rural Areas
on the micro-regional (LAU1) level



	Demographic evolution	Employment and income	Strength of the agriculture	Prosperity of the agriculture	Rural industry, diversification	Tourism and services
Urban micro-regions after the OECD Method	+	+	-	-	=	=
Periurban rural, growing commuting areas	+	+	=	+	+	=
Periurban rural with integrated big farming areas	+	+	=	+	+	=
Industrial, diversified, rather integrated rural areas	=	+	=	=	+	=
Rural areas with significant touristic pressure	=	+	-	=	=	+
Rural areas under light urban influence	=	+	=	=	=	=
R. areas with agricultural decline but diversification	-	=	-	-	+	+
Declining polyculture but possible diversification	-	=	=	-	=	-
Strong agricultural population, polyculture	-	=	+	=	-	=
Big farming rural areas, but on the demog. decline	-	=	+	+	=	=
Big farming rural areas but with a social crisis	=	-	+	+	=	=
Rural areas with agricultural decline and social crisis	=	-	-	-	+	=
Rural areas in crisis but with demogr. stability	+	-	=	-	-	-



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