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ZSÓFIA BENEDEK - BÁLINT BALÁZS

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Authors:

Zsófia Benedek
junior research fellow
Institute of Economics - Centre for Economic and Regional Studies
Hungarian Academy of Sciences
e-mail: benedek.zsofia@krtk.mta.hu

Bálint Balázs
Environmental Social Science Research Group
e-mail: balazs.balint@essrg.hu

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Efficient support of short food supply chains in Hungary: a spatial analysis

Zsófia Benedek – Bálint Balázs

Abstract

There is an increasing political interest in Hungary to relocalize food. A Policy Intervention for Food Relocalization Index is introduced to quantitatively reveal how rural development programme measures should be allocated efficiently to promote local food production. Results show that present level of food activity and future prospects mismatch. Eastern Hungary has the highest potential for further development as it has relatively high level of food activity and food production capacity. The few small-scale farmers operating in Budapest area have been already engaged in short food supply chains to enjoy the various benefits (and higher profit).

JEL: Q18, R12; R58

Keywords: Policy Intervention for Food Relocalization Index; Rural Development Programme; local food systems; small-scale farmers; regional differences; quantitative analysis

Acknowledgement

A rövid ellátási láncok hatékony támogatásának lehetősége Magyarországon: egy térbeli elemzés

Benedek Zsófia – Balázs Bálint

Összefoglaló

Az elmúlt néhány évben a rövid élelmiszer-ellátási láncok gyors térnyerésének lehettünk tanúi világszerte. Ezzel párhuzamosan egyre erősebb az élelmiszer relokalizációjára vonatkozó politikai törekvés is. Jelen elemzésben a helyi élelmiszerrendszerek térbeli mintázatait és fejlődési lehetőségeit járjuk körül. A döntéshozatal támogatása érdekében kvantitatív vizsgálatot terveztünk, amely szokatlan megközelítés a helyi élelmiszerek relokalizációjának kutatásában. A vizsgálat alapját egy élelmiszer-relokalizációs termelői index jelenti, amely alkalmas a helyi élelmiszer-termelés jellegzetességeinek térbeli megjelenítésére, a jelenlegi kistermelői aktivitási szint és a jövőbeli fejlődési potenciál értékelésére. Az erőforrások optimális elosztása érdekében a biofizikai korlátozó tényezőket jelen elemzésben a mezőgazdasági területek arányával vettük figyelembe. Eredményeink arra utalnak, hogy a kelet-magyarországi régió fejlődési potenciálja a legnagyobb, mert a termelés jelen szintje és a termelési kapacitás egyaránt számottevő. Budapest a jelenlegi termelés szempontjából nem meghatározó, ugyanakkor a kistermelők az átlagosnál sokkal nagyobb arányban integrálódtak a rövid ellátási láncokba, ami a magasabb profit lehetőségét biztosíthatja számukra. Általában véve hazánkra jellemző, hogy a helyiélelmiszer-mozgalom még kezdeti fázisban van. Módszerünk alkalmas a helyi élelmiszerrendszerek szakpolitikai fejlesztésének megalapozására, hiszen kimutatja a fejlődési egyenlőtlenségeket, a fejlesztendő területeket, s ez által hozzá tud járulni realisztikus politikai célok kitűzéséhez, valamint az elért eredmények objektív értékeléséhez.

1. INTRODUCTION

In the last years a rapid spread of short food supply chains (SFSCs) was witnessed; and also, an increasing political interest to relocalize food. The latest EU study describing the state-of-the-art of SFSCs in the EU understands them as food chains where the number of intermediaries (most typically retailers) is minimised (ideally to zero); and food production, processing, trade and retail occur within a particular narrowly defined geographical area (Kneafsey et al., 2013).

The local food sector is paradoxical, because its economic significance is inversely related to its political status (Lobley et al., 2013). In the public discourse local food is mostly understood in opposition to the industrial, placeless, seasonless food linked to the global food delivery network. In this respect consumer preference for local food is often considered as an act of resistance to the globalization of food systems. While consumers trust in local farmers and preferences for local food would enable farmers to capture a better proportion of value added, SFSCs are also expected to act as tools of urban regeneration (Janssens and Sezer, 2013) as well as endogenous rural development (Peters, 2012); to maintain local natural resources, communities, knowledge, and traditions (Hendrickson and Heffernan, 2002); to differentiate agricultural production, and to intensify local identity and rural employment through rural tourism (Skuras et al., 2006).

The patterns and processes of SFSCs development in transition countries is particularly interesting as they are not necessarily comparable to that of experienced in the US or Western Europe (Jehlička and Smith, 2011; Jehlička *et al.*, 2013). In fact, there is a limited knowledge about SFSCs as such from the whole region of Central-Eastern Europe. In Hungary, the dominant traditional forms of short food supply (such as farmers markets, market halls, farm shops) are over-dependent on public investments for their sustainable operation, while neo-traditional forms (box schemes, webshops, community supported agriculture schemes, buying groups) reached a rudimentary success in urban and peri-urban areas (Balázs, 2012).

Hungarian policy-making seems to be willing to answer the call phrased by the actors of the originally bottom-up local food movement. The New Agricultural and Rural Development Strategy 2020 created a new vision for sustainable local agro-food systems and promoted relocalization as a policy tool for reconnecting producers with consumers, the city and the surrounding countryside. Exemptions and flexibility rules have been successfully introduced favouring SFSCs developed by small-scale family farmers and small food-enterprises (Balázs, 2012). Within the Hungarian Rural Development Programme, a thematic sub-programme

has been launched on the development of SFSCs to contribute to the implementation of the Multiannual Financial Framework 2014-2020 of the European Union. On the other hand, in contrast with the strong political desire, the number of small-scale producers is decreasing (Balázs, 2012).

In sum, relocalization of food provision has become an important policy goal in national and European scales. However, the discourses on the political as well as the advocacy level about the benefits and potentials of short food supply chains have been proliferating without quantifiable evidence about the sector or the spatial distribution of local food activities. Notable exceptions are Ricketts Hein et al. (2006) which generated an academic discourse on food geographies (Ricketts Hein and Watts, 2010; Watts *et al.*, 2011) and also serves as the starting point of our approach and an advocacy-driven Locavore Index1.

The paper's main purpose is to find out how Hungary's food localization policy can be efficient in improving food security. Based on empirical evidence, areas are pointed out where policy-making could efficiently intervene in supporting short food supply and possibly also wider regional development, environmental and public health objectives.

Our work is based on the Food Relocalization Index (FRI) of Ricketts Hein et al. (2006). The Index was developed in order to map and reveal the strengths and weaknesses of different aspects of local food activity in England and Wales and also, to decide how representative previous case studies were and to justify further research. SFSCs seem to be heavily context-dependent due to different geographical, socio-economic and cultural characteristics. For instance, some of the composing indictors of the original FRI (such as the Women's Institute co-operative markets) are so typical to the English and Welsh environment (Ricketts Hein and Watts, 2010; Watts, Leat et al., 2011), that they cannot be interpreted elsewhere; therefore, the Index is adapted for Hungarian application (see Figure 1 for conceptual framework). Besides mapping current spatial and social patterns of SFSC development, a new methodological approach is suggested to better differentiate between areas with different rural development needs and potential. By creating a Policy Intervention for Food Relocalization Index (PIFRI), areas where supports could be allocated efficiently are evaluated in quantitative terms. Thus, the idea that local food knowledge could be best serviced by relevant evidence provided by qualitative and quantitative analyses is promoted.

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[1] The Strolling of the Heifers Locavore Index created by a Vermont-based non-profit company presents an annual ranking based on the number of farmers markets, food hubs and CSA programs per capita in all 50 states and the District of Columbia.

2.   MATERIALS AND METHODS

The Index of Food Relocalization of Ricketts Hein et al (2006) is composed of two sub-indices: the production and the marketing sub-index (Fig. 1).

Conceptual framework
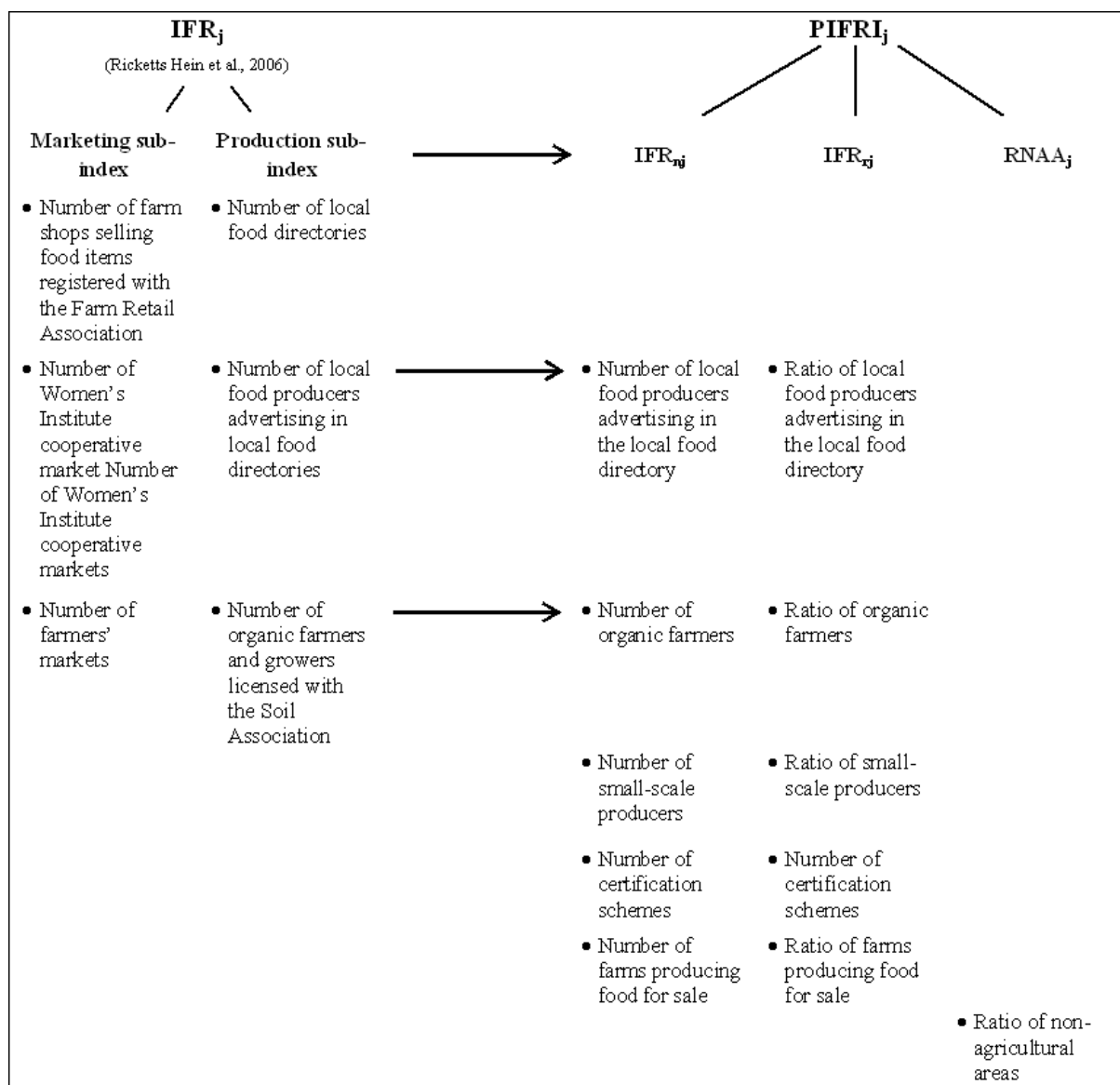
As our aim is to characterize the current patterns and future prospects of production, the former sub-index is in the focus of this research. There is a variety of potential indicators to quantify the activity of small-scale farmers but only a few of them is available for all the 19 counties and Budapest. The following five indicators are used:

- *Number of organic farmers*. SFSCs and organic food production are closely intertwined. First, they share some important features, such as environmentally

beneficial production methods that promote local agro-biodiversity or the intention to reduce the impact of transportation and logistics by selling as locally as possible, etc. Many organic farmers utilize SFSCs (typically organic markets, farmers' markets, CSA initiatives and vegetable box delivery schemes) to distribute their produce (Benedek *et al.*, 2013). Evidence shows that many SFSC farmers adopt organic techniques (usually without certification) to satisfy the complex demand of their customers (Higgins *et al.*, 2008; Jarosz, 2008). Similar indicator was used by Ricketts Hein et al. (2006). Data (as of August 2013) were gained from the homepages of the two Hungarian organic certification bodies, Biokontroll Hungária Nonprofit Ltd. (HU-ÖKO-01) and Hungária Öko Garancia Ltd. (HU-ÖKO-02).

● *Number of local food producers advertising in the local food directory*. The number of directories that list local farmers is increasing. These lists are mostly created and maintained by local NGOs being involved in rural development. Directories with countrywide relevance are much sparse. The homepage of the 'termelőtől.hu' Ltd. is well-known among local food consumers and professionals and contains almost 12,500 records (August, 2013). Farmers advertise themselves for free and on a voluntary basis. Organization of many SFSCs heavily relies on the online social media. Therefore, this indicator is to show how much farmers intend to use the increasing number of online possibilities.

● *Number of small-scale producers*. Among local food producers small family enterprises and also individual producers can be differentiated; however data are available only for the latter: 'small-scale producers' is a taxation category involving individuals only; this could be used as a proxy for the number of all local food producers. Small-scale producers are the most likely to use direct marketing channels, because instead of competing on the global market they aim to capture more added value and increase their profit through SFSCs. Data of Land Information System (LIS) are used.

● *Number of certification schemes*. Certification schemes within the short food supply chain context are used to differentiate SFSC-products from their conventionally produced equivalents based on the place of production. Though some authors consider the use of such certificates as a proof that a product has not integrated in the local socio-economic environment (Watts *et al.*, 2005), other studies suggest that consumers are willing to buy certified products, due to defensive localism (Winter, 2003) and ethnocentric buying behaviour (Chambers *et al.*, 2007). The number of such schemes shows the engagement of farmers towards regionalism and short food supply chains. More importantly, it shows the level of intermediaries that have crucial role in facilitating local food system development (Balázs, 2012). Thus,

the number of certification schemes indicates the current level of activity as well as future potential. Data are from the Hungarian Intellectual Property Office (August, 2013). All food trademarks with the word 'local' in the name were listed except that are owned by individuals and 'wholesale or retail companies. Trademarks with countrywide relevance (e.g. brands of national associations) were excluded from the analysis to ensure localism. Altogether 34 initiatives have been analysed and 19 were identified as NGO-launched.

- *Number of farms producing food for sale*. This indicator shows the number of farmers' owned farms (i.e. that are managed by individuals, not corporations) that use agricultural area and produce food for sale. This way farms that are entirely or partially used for food self-provisioning were excluded from the analysis. Data of the General Agricultural Census, 2010 were used.

Small-scale farming and sales are regarded as the bases of SFSC development. The indicators displayed above focus on different aspects, thus none of them is perfect for diagnosis. The use of several indicators has the advantage that minor shortcomings are ameliorated in order to show general trends. In line with the original methodology, instead of the use of absolute numbers, counties were ranked for each indicator. '1' was given to the county with the highest number to indicate the highest level of engagement.

The 'Index of Food Relocalization with respect to current level of local food activity' (IFR_{nj}) in county j is derived as follows (Model 1):

$$IFR_{nj} = 100\frac{R_j}{NC},$$
(Eq.1)

The subscript 'n' refers to the fact, that the indicators are expressed in absolute terms (not in ratios like in case of IFR_{rj} in Model 2). R_j is the sum of individual indicator rank scores for county j, N is the number of indicators and C is the number of cases (counties). Budapest was regarded also as a county, according to the official administrative subdivision in Hungary. Index values may vary from 5.0 to 100 if a county gets 1st (top) and 20th (bottom) scores in every indicator, respectively. Lower IFR_{nj} values indicate higher potential for being involved in the local food movement.

The indicators presented above reveal the current level of local food activity. However, for policy-making, information on the prevalence in a region is equally important. In many cases, the National Advisory Network seems to be inefficient (in terms of outreach); instead, other farmers and the word of mouth are important sources of information. The positive example of a successful farmer involved in SFSCs may influence the others, so the more active the local food movement in time t is, the faster spread can be expected during the following period (until all consumer demand is fulfilled and the market becomes saturated. As the movement is still at an early stage in Hungary, saturation is not expected in the near

future). To quantify the prevalence, the absolute numbers were compared to the overall number of agricultural businesses. Data on agricultural businesses were drawn from the General Agricultural Census (2010), which is the latest available data source. Thus, ratios were calculated for all indicators (except for the number of certification schemes, which is more connected to the level of NGO-activity). Following the layout of the IFR_{nj} a new index, the 'Index of Food Relocalization with respect to the prevalence of local food activity' (IFR_{rj}) is defined (Model 2). IFR_{rj} is based on the indicators '*ratio of organic farmers*', '*ratio of local food producers advertising in the local food directory*', '*ratio of small-scale producers*', '*number of certification schemes*' and '*ratio of farms producing food for sale*' (see Figure 1).

The outcomes of the two models are compared with each other and with the ratio of agricultural areas (data referring to 2010 were derived from the Central Statistical Office) with Pearson correlation. Normal distributions are tested with Shapiro-Wilk, Shapiro-Francia and Kurtosis tests.

Also, the ratio of agricultural areas shows the biophysical limits that should be taken into account, too, during policy-making. To use a similar scaling system as IFR_{nj} and IFR_{rj} (where lower values express higher capacity); the ratio of non-agricultural areas ($RNAA$) is used and thus, a Policy Intervention for Food Relocalization Index ($PIFRI$) is created to decide where the funds can be spent optimally:

$$PIFRI_j = IFR_{nj} + IFR_{rj} + RNAA_j. \qquad \text{(Eq.2)}$$

Counties should be regarded according to their rank that is based on Eq. 2: the county with the lowest score is expected to perform the best.

3. RESULTS AND DISCUSSION

The indicators of local food production and the Index of Food Relocalization with respect to the current level of local food activity (IFR_n) are shown in Table 1. Individual indicators are considered as the ranks of absolute numbers (Model 1).

Results are visualized in Fig 2.a. Different indicators of local food production score remarkably different in case of certain counties; which implies an uneven development. For example, Bács-Kiskun County can be regarded as highly developed (compared to other regions), local food activity is relatively wide-spread; but the use of the online and social media is not typical among farmers. Thus, with the aim on the analysis of indicators, realistic policy goals can be set.

Table 1

The indicators of local food production and the Index of Food Relocalization (IFR_n) showing current local food activity in the capital and counties of Hungary.

County	Number of organic farmers		Number of local food producers advertising in the local food directory		Number of small-scale producers		Number of certification schemes		Number of farms producing food for sale		IFR_n
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	
Szabolcs-Szatmár-Bereg	146	1	934	5	864	5	2	7	5082	9	**27.0**
Bács-Kiskun	119	2	122	20	1847	2	4	2	13 442	2	**28.0**
Hajdú-Bihar	112	3	542	12	1080	3	1	9	9444	3	**30.0**
Pest	81	6	822	7	598	9	4	2	5464	7	**31.0**
Jász-Nagykun-Szolnok	72	9	654	10	772	6	2	7	19 269	1	**33.0**
Csongrád	49	10	374	15	947	4	5	1	7651	5	**35.0**
Győr-Moson-Sopron	89	4	486	13	564	10	1	9	4175	11	**47.0**
Borsod-Abaúj-Zemplén	87	5	290	16	355	14	3	4	5375	8	**47.0**
Békés	80	8	234	17	2130	1	0	17	9235	4	**47.0**
Tolna	29	16	990	4	732	7	1	9	3079	12	**48.0**
Zala	25	19	1 158	1	332	15	3	4	2644	13	**52.0**
Heves	32	13	598	11	386	13	1	9	5937	6	**52.0**
Veszprém	35	12	1 102	2	267	17	1	9	2103	17	**57.0**
Baranya	40	11	178	18	536	11	3	4	2346	15	**59.0**
Somogy	31	15	878	6	518	12	0	17	4972	10	**60.0**
Vas	26	18	1 046	3	274	16	1	9	2148	16	**62.0**
Fejér	32	13	430	14	626	8	0	17	2608	14	**66.0**
Budapest	81	6	166	19	227	18	1	9	345	20	**72.0**
Nógrád	28	17	766	8	71	20	1	9	1132	18	**72.0**
Komárom-Esztergom	24	20	710	9	212	19	0	17	1005	19	**84.0**
Sum	**1 218**	-	**12 480**	-	**13 338**	-	**34**	-	**107 456**	-	-

The most developed area of Hungary (with respect to GDP) is the capital, Budapest, which has bottom scores for most of the indicators. The eastern part of Hungary seems to have higher potential for development as the foundations (presence of small-scale farmers) are stronger, more typical there. This pattern weakly coincides with the ratio of agricultural areas in the counties displayed in Fig. 3 (R^2=0.2686; p=0.0192; the results of the tests on normal distributions are shown in Table 2).

Figure 2

**The spatial distribution of the potential for local food movement engagement
and consumer demand in Hungary: the Index of Food Relocalization.**
(a): the individual indicators are considered as absolute numbers (IFR$_{nj}$) to show current
level of local food activity;
(b): the individual indicators are considered as ratios (IFR$_{rj}$) to reveal the prevalence of local
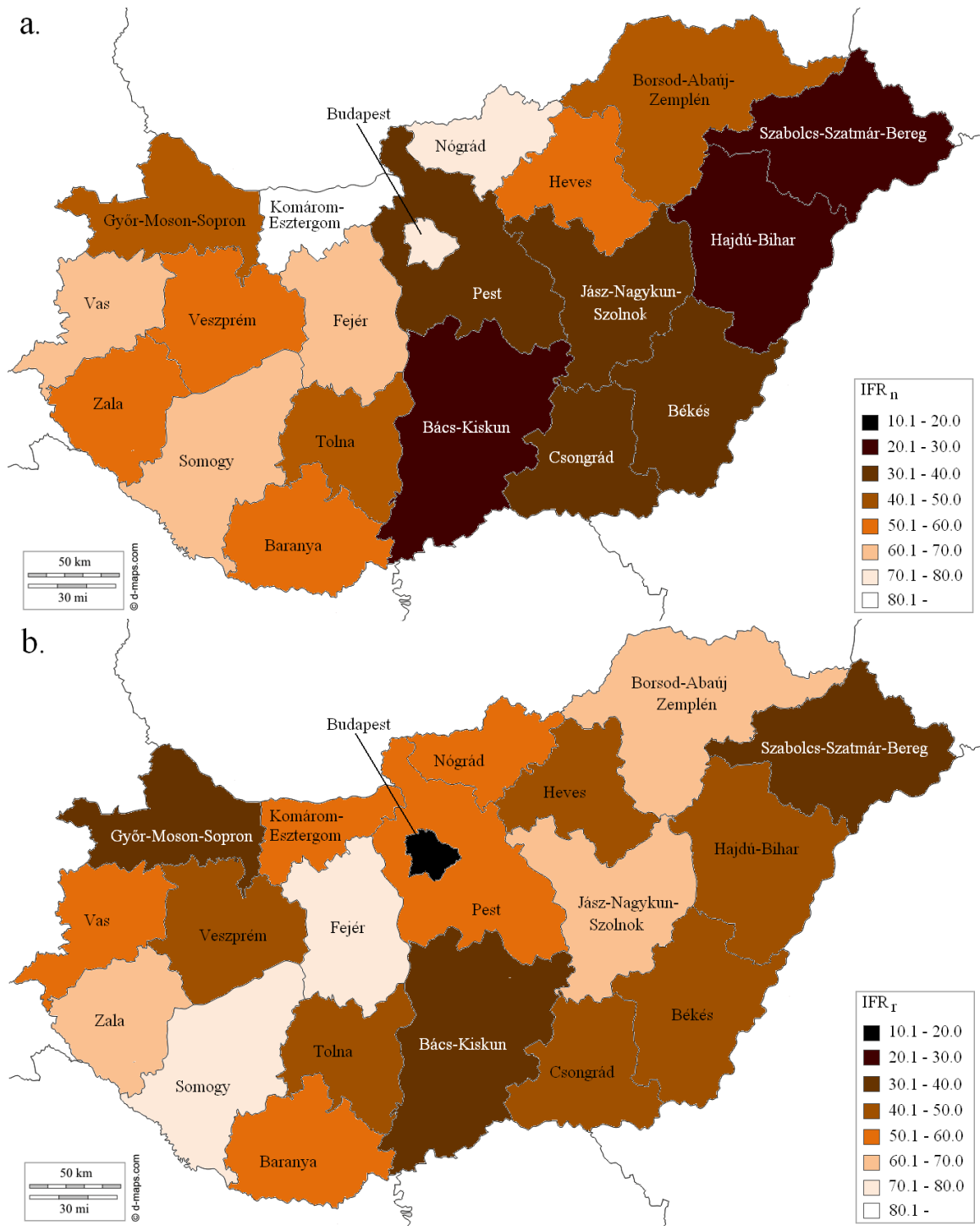food activity. Darker colours show higher rank.

Figure 3

The ratio of agricultural areas in the Hungarian counties and Budapest.

Data source: Central Statistical Office. Data refer to 2010. Country average: 57.%.

Darker colours show better biophysical conditions for agricultural production.
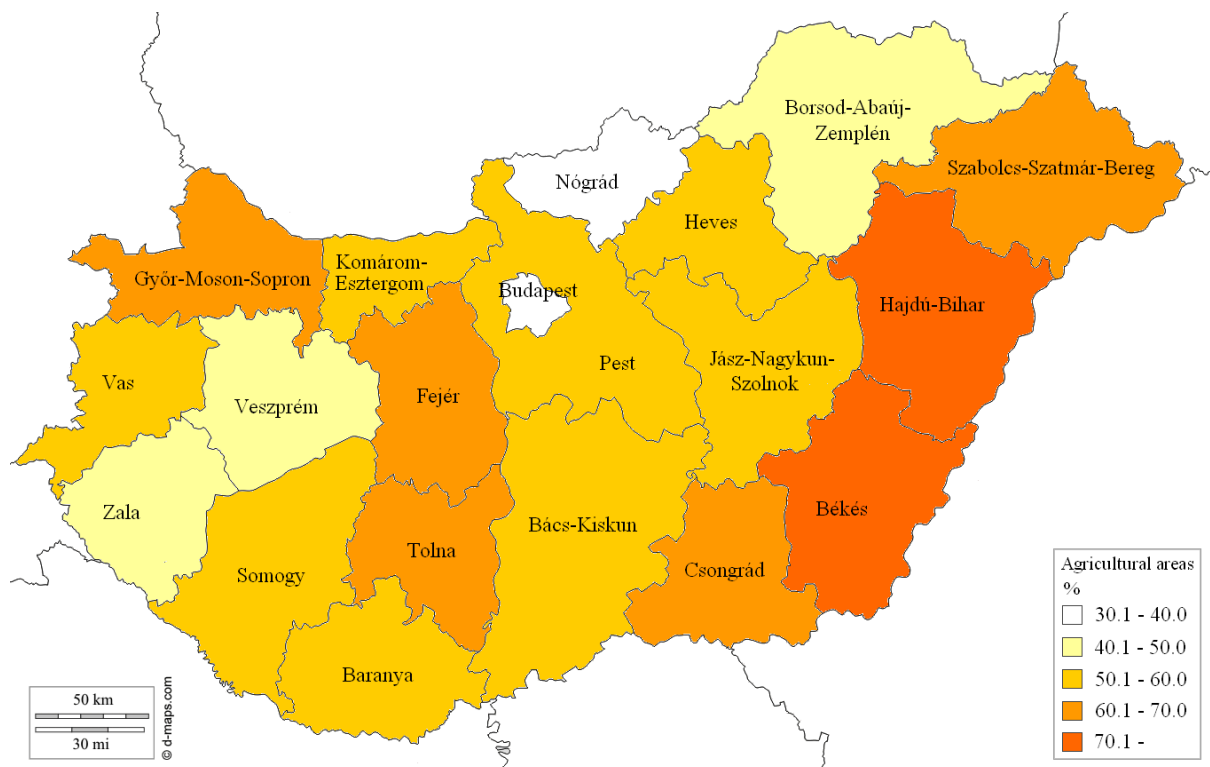
Table 2

The results of the tests on normal distributions.

	IFR_n	IFR_n	Ratio of agricultural areas
Shapiro-Wilk p value	0.49025	0.96195	0.97000
Shapiro-Francia p value	0.63687	0.95176	0.99117
Kurtosis test p value	0.7027	0.7016	0.9178

The current level may be the consequence of certain geographical characteristics (the Great Plain lies at the eastern-south-eastern part of Hungary) as well as land use traditions. The northern part is hillier, where forested landscapes are much more typical.

Table 3 displays the indicators of local food production and the Index of Food Relocalization with respect to the prevalence of local food activity (IFR_r) in the capital and counties of Hungary, when the individual indicators are considered as the ranks of ratios (Model 2).

The indicators of local food production and the Index of Food Relocalization (*IFR_r*) showing the prevalence of local food activity in the capital and counties of Hungary.

County	Ratio of organic farmers		Ratio of local food producers advertising in the local food directory		Ratio of small-scale producers		Number of certification schemes		Ratio of farms producing food for sale		*IFR_r*
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	
Budapest	5.19	1	10.64	1	14.55	1	1	9	22.12	7	**19.0**
Szabolcs-Szatmár-Bereg	0.55	2	3.54	8	3.27	5	2	7	19.24	9	**31.0**
Győr-Moson-Sopron	0.50	3	2.73	10	3.17	6	1	9	23.46	6	**34.0**
Bács-Kiskun	0.22	7	0.22	20	3.39	4	4	2	24.66	4	**37.0**
Heves	0.18	12	3.36	9	2.17	11	1	9	33.34	1	**42.0**
Csongrád	0.15	14	1.16	15	2.94	7	5	1	23.76	5	**42.0**
Tolna	0.14	16	4.88	6	3.61	3	1	9	15.16	10	**44.0**
Hajdú-Bihar	0.24	5	1.18	14	2.36	10	1	9	20.64	8	**46.0**
Békés	0.21	8	0.63	19	5.71	2	0	17	24.77	3	**49.0**
Veszprém	0.20	9	6.36	4	1.54	15	1	9	12.14	13	**50.0**
Nógrád	0.26	4	7.11	2	0.66	20	1	9	10.50	18	**53.0**
Vas	0.15	15	6.07	5	1.59	13	1	9	12.46	12	**54.0**
Baranya	0.19	11	0.84	17	2.53	9	3	4	11.08	16	**57.0**
Komárom-Esztergom	0.22	6	6.57	3	1.96	12	0	17	9.31	20	**58.0**
Pest	0.17	13	1.77	13	1.29	16	4	2	11.79	15	**59.0**
Jász-Nagykun-Szolnok	0.10	18	0.92	16	1.08	18	2	7	26.96	2	**61.0**
Borsod-Abaúj-Zemplén	0.20	10	0.65	18	0.80	19	3	4	12.12	14	**65.0**
Zala	0.10	19	4.45	7	1.28	17	3	4	10.17	19	**66.0**
Fejér	0.13	17	1.80	12	2.63	8	0	17	10.95	17	**71.0**
Somogy	0.09	20	2.65	11	1.56	14	0	17	15.00	11	**73.0**
Sum	-	-	-	-	-	-	**34**	-	-	-	-

Results are visualized in Fig 2.b. Similarly to the previous results, the indicators show uneven development in some counties. For example, in Jász-Nagykun-Szolnok County, the ratio of farms producing food for sale is relatively high; however, these farms do not tend to exploit the possibilities of the local food movement development. Prevalence is by far the highest in the capital, Budapest - where the absolute numbers are very low (Budapest has bottom scores for most of the indicators, see Table 1.)

The indicators scores also show that the development of the local food production sector in Hungary is in an early stage, thus saturation is not expected in the near future.

Table 4 compares Model 1 and Model 2 and also shows the results of *PIFRI*, revealing where the policy on the support of SFSCs is expected to be the most successful.

Table 4

Comparison of Model 1 and Model 2 and the values of Policy Intervention for Food Relocalization Index (showing where an intervening policy measure expected to be the most efficient).

County	IFR_n		IFR_r		$RNAA$		$PIFRI$	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Szabolcs-Szatmár-Bereg	27.0	1	31.0	2	35.5	5	93.5	1
Hajdú-Bihar	30.0	3	46.0	8	27.7	2	103.7	2
Bács-Kiskun	28.0	2	37.0	4	40.7	8	105.7	3
Csongrád	35.0	6	42.0	5	34.2	4	111.2	4
Békés	47.0	9	49.0	9	23.1	1	119.1	5
Győr-Moson-Sopron	47.0	7	34.0	3	38.7	7	119.7	6
Tolna	48.0	10	44.0	7	30.8	3	122.8	7
Jász-Nagykun-Szolnok	33.0	5	61.0	16	41.5	10	135.5	8
Pest	31.0	4	59.0	15	46.9	12	136.9	9
Heves	52.0	12	42.0	6	47.1	13	141.1	10
Budapest	72.0	18	19.0	1	62.5	19	153.5	11
Baranya	59.0	14	57.0	13	41.1	9	157.1	12
Veszprém	57.0	13	50.0	10	56.2	17	163.2	13
Vas	62.0	16	54.0	12	48.5	14	164.5	14
Borsod-Abaúj-Zemplén	47.0	8	65.0	17	53.9	16	165.9	15
Fejér	66.0	17	71.0	19	38.2	6	175.2	16
Zala	52.0	11	66.0	18	57.6	18	175.6	17
Somogy	60.0	15	73.0	20	48.8	15	181.8	18
Komárom-Esztergom	84.0	20	58.0	14	45.3	11	187.3	19
Nógrád	72.0	19	53.0	11	64.1	20	189.1	20
Pearson correlation p value	0.3660				-		-	

A number of interesting outcomes may be drawn. Eastern Hungary (especially Szabolcs-Szatmár-Bereg County) shows the highest potential for development as the local food production capacity (human resources and land availability) is the highest there. Noticeable disparities between the rankings of food activity (IFR_n) and prevalence (IFR_r) reflect dissimilar development patterns and potential in Budapest, Jász-Nagykun-Szolnok and Pest Counties. Regarding production, local food activity is relatively scarce in Budapest but producers are the most exposed to changing consumer preferences and they react quickly. In case of further support, spectacular future development seems likely in the absolute number of small-scale farmers involved in SFSCs; however, due to the less favourable biophysical conditions, exploitation of Rural Development Programme measurements is expected to be less efficient. Jász-Nagykun-Szolnok and Pest counties are quite engaged in current local food activity, thanks to significant NGO activity in the region and the proximity of the

marketing possibilities in the capital. Whereas, they are homes for the highest number of agricultural farms so relatively underscore in local food prevalence; which means that an intervening policy would be expected to require longer timescales to reach prevalence.

To resolve discrepancies, not only expectations should be phrased but food relocalisation policy goals need to be clearly stated; and the time horizon should be carefully calculated within which the goals are to be achieved. Most importantly, biophysical limits (*RNAA*, see also Fig 3. on the ratio of agricultural areas) should be taken into account while goals are to be set. Such limits are given extra emphasis in our model, especially as the ratio of agricultural areas weakly influences the distribution of small-scale farmers on the county scale.

4.   CONCLUSIONS

Our paper offers a novel quantitative approach to academic discussions on short food supply chains (SFSCs) from a transition country. In the light of the coming EU funding possibilities in the 2014-2020 period, efficient entry points for policy-making are revealed based on the current patterns of small-scale food production in the counties of Hungary. New metrics and a methodological development are introduced to help the assessment of the policy success through our Policy Intervention for Food Relocalization Index (*PIFRI*) that shows where SFSCs can be most efficiently facilitated. In general, local food movement in Hungary is still in an early stage; saturation is not expected in the near future.

Several difficulties emerged when the Index of Food Relocalization of Ricketts Hein et al. (2006) was applied in Hungary. In some cases it was possible to find similar indicators from statistics or by integrating available datasets to the indicators, but some stayed without the necessary cultural equivalent form, such as the Women's Institute co-operative markets. Similarly to the original study, data availability was a limiting factor. Still, it can be concluded that the Index is easily adaptable and it proves to be a valuable tool for mapping local food activity and so it can support policy-making.

Future research includes the analysis of background indicators (such as socio-economic characteristics of urban and rural populations, features of tourism etc.) to understand the current distribution of the local food production potential. Also, consideration of marketing possibilities and the spatial pattern of consumer demand are aimed to fully understand the potential for the local food sector development in Hungary.

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