Resituating the Local in Cohesion and Territorial Development

Case Study Report

May a Production Organisation prevent Mass Pauperisation?

An Example from Hungary

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RELOCAL
Resituating the Local in Cohesion & Territorial Development

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Abbreviations

DAOP	Southern Great Plain operative Programme
DélKerTÉSZ	Dél-alföldi Kertészek Szövetkezete (Name of the Producing Organisation investigated)
EAFRD	European Agricultural Fund for Rural Development
EC	European Commisssion
EFRD	European Fund for Regional Development
EGTC	European Grouping of Territorial Cooperation
ESF	European Social Fund
EU	European Union
EUR	Euro
GDP	Gross Domestic Product
HUF	Hungarian forint
KZR	Korai Zöldségtermesztési Rendszer [Early Vegetable-Production System]
LAU	Local Administrative Unit
NUTS	Nomenclature of Territorial Units for Statistics
PO	Producer Organisation
R&D	Research and Development
SGI	Services of General Interest
SME	Small and Medium-Sized Enterprises
TOP	Territorial Operative Programme

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Executive Summary

DélkerTÉSZ is the largest producers' organisation with broad production networks of vertical and horizontal branches penetrating to the vegetable (mainly paprika and tomato) growing sector in a much wider area than that of the Szentes District and beyond. It is also influential since its chief manager (the president) of the co-operation holds the highest position in a national organisation of vegetable and fruit growers (president of FruitVeb) thus plays an important role in lobbying for the interests of the sector and its growers, too.

The research revealed the *causes of the exceptionally severe shortage of labour* and pointed to its consequences: the discrepancies prevailing between the labour demand of producers and the supply of vulnerable labourers do not diminish. This is what induces and ever-growing catchment area stretching 50-100 km from the study area. What is also made clear by the case study is the great value of workers who have learnt a specific skill during young age, those who have been socialised for an expertise. Qualitative research pointed out that skills of gardeners in the study area are historically shaped 'habitual' asset shared by the leaders of the PO, most of its members (producers) as well as their permanent workers.

These capabilities are obviously place based although the action itself is not. The place-relatedness of the case is otherwise evident being agricultural and using natural resources.

The case study presented that the *adaptation pressure* on producers has always been high in the 16-year history of the PO. The co-operative supported its members substantially but not fully when they were forced through competition to invest to change technologies in order to make sure the growth of their production. The use of thermal energy was also more and more expensive. To complete the picture, we must also add that the PO was also trapped by growth pressure since eligible EU subsidies (4,6%) have been based on the turnover of sales. This explains why the social composition of the membership of the PO has shifted towards bigger producers at the expense of the small ones.

It seems plausible to say that the current decision-making mechanisms empower the producers to influence the direction of the development of the PO only to a limited degree. The more *professionalized decision-making* structure since 2009 has been effective but has reduced the space for democratic mechanisms of the co-operative. It seems that an era has just ended in the history of the PO. Besides the professional operation, this period was characterized with an all-encompassing aura of trust, and with a leadership based on personal guarantees, humanity, good-will, and commitment. The new generation of leaders and members will bring not only a new style of operation, but probably new directions as well.

In the EU policy context this case study provides feedback upon the secondary (social) impact of a particular form of agricultural support

Outlook

The secondary, social aspect of its operations will likely be further diminishing already on the short run therefore *the relevance of the PO in tempering and preventing social vulnerability will further narrow.*

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1. Introduction

This case is clearly an outlier, because it is a private economy organisation even though it is supposed to work as a non-profit organisation; accordingly, it has indeed shared part of its profit with the members of the co-operative. We must add: boni have been calculated on the basis of sales, meaning that the larger producers were granted more. When we selected this topic and this particular organisation for case study research, we were aiming to answer the question whether a private-economy agent can do more and better in preventing mass poverty in rural areas. It has turned out that it both can and cannot, at least provisionally. However, its importance lies in providing refuge for smaller players for a relatively long time (1.5 decades) and allowing them to stay on board, by earning their livelihood as self-employed or as family farmers up until their retirement.

The case study informs about a non-place-based action being implemented in a place-based manner through the adequate use of endogenous natural resources (climate and the good quality earth, water, and most importantly thermal water to heat greenhouses and foil tunnels) and human resources alike, even if both of these resource types tend to be over-exploited. Local knowledge and co-operation among stakeholders can also been identified when for example local politicians were jointly lobbying against the planned law on re-injection of used thermal water, which would have destroyed intensive gardening in the region. However, the case raises issues related to environmental sustainability touched upon by this study, too

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2. Methodological Reflection

The territorial focus of the investigation is constituted by the spaces where the producers' linkages with the Producer Organisation (PO) are the strongest. Thus we did research in the town of Szentes, where the PO is seated and in neighbouring villages (Szegvár, Fábiánsebestyén, Mindszent). The research had a mixed methods approach: on the quantitative side we analysed official statistics, we used geo-coded census micro data, we mapped and analysed the members of the PO were, and we reviewed the relevant literature. On the qualitative side we conducted semi-structured interviews (see Annex 8.1) and did participant observation. Informants were selected in a way to represent different positions within the PO. We used a snowball method to reach ordinary members. Before each interview we informed our informants with an "information sheet", which described the project, its targets, the contacts of the main researchers, and our data-protection policy. (See Annex 8.4.1)

Participant observation took place in one of the vegetable producers' heated greenhouse in Szentlászló (one working day), (Field_notes _greenhouse) and in the packaging unit of the PO (two working days). This part of the research was done by Melinda Mihály, an early career member of the research group (Field_notes_packaging_area). She asked her informal interview partners how they feel about their employment and about the PO (management, services). Furthermore, she encouraged them to raise any other relevant topics.

Working together with people let the researcher see how the actual work has been organised either by an ordinary producer within his own enterprise, or by one of the key leaders of the PO in the main production area (packaging site).The informal discussions during sorting and packaging peppers together with the employees, or binding and pruning peppers with daily labourers of the greenhouses provided not only an opportunity to better understand the working conditions of workers, but it also helped to build trust between workers and the researcher. It helped us to understand the relationship and the tone of communication between labourers and entrepreneurs/leaders in different contexts. In the meantime, workers' social background and their views on the good and hard sides of their jobs were also revealed. From their stories about daily work in the greenhouses or at the production line, narratives on the positionality of different vulnerable labourer groups (such as seasonal workers, Roma workers) and their work experiences were coming up and explained. Current issues regarding the management were also emerging and interpreted (e.g. the chief manager of the PO retired in January 2019).

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3. The Locality

3.1 Territorial Context and Characteristics of the Locality

The selection criterion for the locality was determined by the territoriality of the key player of the studied "action". This key player which is the DélKerTÉSZ Co-operative seated in Szentes. The co-operative has members not only from a wide surrounding area in the NUTS-3 region, but also in the neighbouring county, and sporadically in more distanced parts of the country (Table 1). Among the 44 connected settlements (see Maps 1-2), we selected three neighbouring villages for a closer investigation: Fábiánsebestyén, Mindszent and Szegvár. However, the main territorial focus of our study remained in the centre, Szentes.

Name of Case Study Area	Szentes and its near surrounding (4 settlements)
Size	571 km2
Total population (2016)	39,936 Citizen
Population density (2016)	70 Citizen / km2
Level of development in relation to wider socio-economic context • Disadvantaged within a developed region/city? • Disadvantaged within a wider underdeveloped region?	Not particularly disadvantages neither the NUTS-3 region, nor the LAU-1 unit
Type of the region (NUTS3-Eurostat) • Predominantly urban? • Intermediate? Predominantly rural?	Intermediate
Name and Identification Code of the NUTS-3 area, in which the locality is situated (NUTS 3 Code(s) as of 2013)	HU333 Csongrád-Csanád megye, Csongrád-Csanád county
Name and Identification Code of the NUTS-2 area, in which the locality is situated (NUTS 2 Code(s) as of 2013)	HU33 Dél-Alföld/South-Great Plain
Illustration: Geographical location of NUTS-3 (light green) and LAU-1 area in Hungary's territory	

Table 1: Basic socio-economic characteristics of the area

Source: HCSO, Detailed Gazetteer of Hungary; Eurostat, Statistics Explained

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3.1.1 Presentation of the researched area

Geography, natural endowment

The town of Szentes is located in the Southern Great Plain region. Its permanent population had been continuously declining for decades, and by 2017 it diminished to 27,820. Szentes is a market town surrounded by traditional homesteads, with a special national and regional significance both in the economy and in public services (Table 2)[1].

The area of Szentes is a typical lowland in the Hungarian Great Plain. Typical elements of this landscape are the associated black earth farmlands, the Tisza coast and the valley of the Hármas-Körös River. The territory's unique natural resource is its rich thermal water supply.

The terrain of the city and its surroundings, the long hours of sunlight, the excellent fertility of the soil, the abundance of surface waters that compensate for the low rainfall, and the low-lying thermal waters together constitute the outstandingly favourable natural resources which have formed the basis of the blooming agriculture of Szentes and its surroundings.

The utilisation of geothermal energy in the Szentes region is of great significance not only in Hungary but also from an international perspective. The geothermal field that can be found here is the largest in Hungary, and the densest in Europe. Built over a period of fifty years, this complex system is able to provide thermal energy for homes, public buildings, greenhouses, plastic tunnel plants, livestock farms and grain dryers, and it also supplies thermal water for the local spa and outdoor thermal baths.

The extractable thermal water reaches the surface at a temperature of 85-100 °C from a depth of about 2,000 meters, or 70-80 °C from a few hundred meters smaller depth. The installation of wells happened continuously, but in an undulating manner from the early 1960s, the last one being established a few years ago. For example, the 14 wells belonging to the Árpád Ltd net to the Szentlászló area were drilled between 1964 and 1988, with the highest number equalling half of all the wells drilled between 1978 and 1980. In the 1980s, each of the agricultural cooperatives in Szentes had a thermal well. Of the surrounding settlements three thermal wells in Fábiánsebestyén and six in Szegvár satisfied the demand in heat energy of the local horticultural farms. (See more about the issue in Annex 8.4.2)

[1] Public services in Szentes include special healthcare and educational services (e.g. institutions for treating musculoskeletal and cardiovascular diseases, a school providing horticultural vocational training, a high school specialized in drama), and a military base.

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Processes and trends, endogenous resources, socio-economic picture

HCSO data	Permanent population		Old age index		Employed within the 15-64 age group	Unemployed among people of active age	Registered job seekers of active age	Publicly employed among people of active age	Monthly income per taxpayer after tax
Year	1990	2017	1990	2017	2011	2011	2017	2017	2017
Mindszent	7912	6784	1,21	1,95	51,7%	8,4%	2,4%	3,0%	131 464
Fábiánsebestyén	2512	1952	0,85	2,51	59,2%	7,5%	1,8%	1,8%	138 133
Szegvár	5347	4443	1,16	2,19	56,1%	7,8%	2,3%	2,5%	137 450
Szentes	32823	27820	0,97	2,14	59,1%	6,6%	2,1%	2,2%	155 219

Table 2: Socio-economic data of the close study area

Source: Population Census 2011

Two opposing processes can be highlighted in the development of the area in the last 1,5 decades: (1) the gradual decline following from the distant geographical location (Szentes lies far away from the centres of economic modernization) and peripheral transport situation on the one hand, and (2) the availability of human and natural resources that can mitigate and partially offset the negative trends, on the other. Human resources appear in the form of stable urban management, balanced, cooperative local public life, a wide range of political and professional relations at national level, and in the people's ability to act in their own interests. *Openness to innovations, flexibility and adaptive attitudes simultaneously characterize the local economic, political and social elite*, which ensured the successful representation of the city and the interests of the region under different political regimes. The most essential natural resource of the area is the already mentioned *thermal energy* concentrating in the Szentes and Szegvár area, which has been continually exploited for public and private interest (i.e. intensive gardening).

From the perspective of demographical change the outcome of opposing processes is negative. Over the past 15 years, *the number of permanent residents of Szentes has decreased by 12%*. The accelerating pace of outmigration has an important role in the decline, affecting primarily the more educated, motivated and younger population. This selective outmigration ends up in a vicious circle: the proportion of women in childbearing age is constantly decreasing, which results in decreasing fertility rates, and contributes to the aging of the population[2].

Employment data are less problematic: Szentes can be found at the end of the first third in the ranking order of Hungarian cities of similar size. For example, the proportion of the employed in the 15-64 age group in the town is 4% higher than the national and county average, which corresponds to the data of the more developed regions. Compared to cities of similar size, the greatest shortcoming occurs in gross value added and wage levels, partly as a result of the sectoral structure of the economy. The distribution of local businesses and employees by sectors *in agriculture, transport, warehousing and commerce* shows a significant positive deviation from the data of the county or of similar cities. These higher rates are the result of *more intensive demand for labour in greenhouse and plastic tunnel horticulture* (with significantly longer growing time), as well as of *the associated warehousing, packaging, processing and trade activities*. The significance of lower profit-rate economic sectors in the town results in *lower average wage levels*. In 2017, the average monthly after-tax income per taxpayer was HUF 153,000 (EUR 494),

[2] The ageing index increased from 127% in 2001 to 190% in 2011, and to 213% in 2017. At the same time, the proportion of active-age people (15-64 years old) in the total population is also declining at an accelerating rate, after 69% in 2001 it was still 68% in 2011, but it dropped to 63% by 2017.

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which is well below the national average of the cities with 25-35 thousand inhabitants (HUF 179,000, EUR 577).

In low-wage employment (horticulture, packaging, poultry processing), labour shortages are now clearly present in Szentes. At the same time, the low number, or the absence of jobs requiring higher qualifications continue to force many local young people to leave the city after graduation, while the range and quality of services available and the favourable natural and social environment would be an attractive prospect for settling down in and around Szentes.

The sample area of our research is the "core area" of the "Délkertész" Cooperative, which includes Fábiánsebestyén and Szegvár, which are directly connected to the town of Szentes, and also Mindszent, which belongs to Hódmezővásárhely from an administrative point of view, but is also directly neighbouring Szentes. The location and size of the three settlements show significant differences from a demographic and economic point of view, whilst from an employment perspective they are similar.

Fábiánsebestyén lies 18 km east of Szentes, and its outskirts are directly connected to the largest thermal field around Szentes. Szegvár is located along the River Kurca, 10 km south of the city, whereas Mindszent is situated on the banks of the River Tisza, at the mouth of the Kurca, at an equal distance from Szentes and Hódmezővásárhely (18 km).

Although the population of the three settlements differ significantly, demographic indicators show a similar age structure and continually declining population. The most serious problems in all three settlements are outmigration and aging, but the extent of these issues is related to the size of settlements. Fábiánsebestyén with its current population of 1,952 (2017) has lost 20% of its population since 1,990, and its ageing index (2.5) indicates rapid aging in the future. The data of Szegvár with 4443 (2017) inhabitants are slightly more favourable (16%, 2.2), while those of Mindszent with 6,784 inhabitants (2017) are even better (12%, 1.9). According to official census data, the proportion of the Roma population is 1-2% for all three settlements.

The employment and unemployment figures of the three settlements reflect curiously similar processes. The proportion of people at working age in all three settlements is around 62%, which clearly confirms our earlier statement on ageing. The proportion of the unemployed (registered job-seekers) and public workers among the active-age population in 2017 also had nearly equal figures of 2-2.2% and 2-3% respectively, while in 2011 the ratio of the unemployed among the working age group was 11 -12%. All in all, the relatively favourable labour market situation, just like in the case of Szentes, gives way to lower wage employment, since the monthly taxable income per taxpayer is around HUF 130,000 in all three settlements, i.e. significantly lower than the national average (HUF 140,000) and also the average value for similar settlements.

3.2 The Locality with regards to Dimensions 1 & 2

Analytical Dimension 1: Spatial (in-)justice within the locality

When we started our fieldwork and set up hypotheses about the potential soci-spatial and developmental role of the Szentes PO, we thought that the population of the scattered farmsteads (*tanyák*) will be the one, which is affected most positively. We were mistaken. Our study revealed that from the perspective of the PO the disadvantageous population of Szentes and of the adjacent villages is much less relevant than expected. The reason for this is that the concentrated production sites have been more accessible from the city.

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To assess spatial vulnerabilities, we used the proxies of employment rate and low education rate by gender. We had access to geo-coded micro data allowing for grouping by census districts, meaning 250 people. (See Annex 8.3.a 1-2, 8.3.b 1-2). Maps convincingly show the close connection of the two indicators: *locations where low-educated women and men live are almost entirely overlap with the ones where low employment rate* can be identified. Differences between male and female employment or education rates are also nicely visualised.

Average figures for the research area are illustrated in the table below (Table 3).

Indices	Activity rates	The rate of people with maximum level of ISCED-2
	of the population between 15-64 years of age	
Female citizens	58,1 (58,7)	27,8 (22,1)
Male citizens	69,6 (68,2)	24,3 (22,4)

Table 3: Average activity and low-education rates in the study area among the population 15-64

Source: Population Census 2011

If we compare these figures with those of the county average (in brackets), some divergences worth to highlight: employment figures are somewhat better in the study area, than the county average, whilst low-level education rates are significantly worse. County figures call attention to a relatively large gap (3.5 percentage point) in the study area between female and male citizens with low educational data (this does not apply for county figures), whilst the gap is similar between employment rates of women and men at county level and in the study area. The gendered education gap at the lowest end could be explained with the larger number of women than men (21,976 vs 20,065 in 2011) and with the higher proportion of elderly women who used to be under-educated in rural areas (mainly in villages, but also in rural towns) up until the end of the 20th century.

Getting closer to our main problematique, i.e. the intertwining social and spatial vulnerabilities and the way it is looked at / handled (or not) by the Production Organisation in the study area, one can say that in the hierarchy of prestige and appreciation within the PO, level of education does not matter too much. This is mainly because gardening is an expertise, which is learnt to a large extent through practice. (For example we found that one of the leading figures within the PO has only secondary education, whilst quite some university graduates are to be found among ordinary producers.) At the same time, we also found that the PO values knowledge, therefore they always encouraged their members to participate in various courses of tertiary education, organised study tours to the Netherlands, and set up a network of advisors, who have helped producers with relevant know-how. These advisors also helped the PO management to estimate the expected amount of vegetables produced, which is one of the cornerstone of the operation of the PO. In the organizational hierarchy of the PO, the place of residence matters to some extent. The leaders of the PO are all citizens of Szentes, but it does not create a major aspect of division between people of advantageous and disadvantageous social position. What matters, however, is whether a gardener is recognized by the gardeners' community as a "good one": this recognition is usually based on gardening-related capabilities measured by the total volume of the produced vegetables.

In the study area gardening is an expertise learnt, further developed and transmitted from generation to generation. The roots of gardening in the Szentes-Szegvár core area where goes back to the activity of so-called Bulgarian gardeners, who established irrigated early-season vegetable gardens as early as 1875. In addition to being knowledgeable in horticulture, what needed and appreciated at the PO is endurance, humbleness for the plant grown, pride for the straight rows and the beautiful products, and, last but not least, a passionate desire of success. Ironically

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enough, dividing lines amongst actors who possess these motives and those who are deprived of, do not correlate with the division line between owners of plantations and day labourers who work for them. To put it more precisely, the most important dividing lines do not run between these two players of the business. However, deep social divisions have been revealed by our research between 'habitual' gardeners who had been socialised for gardening and vulnerable labourers. The group of vulnerable labourers have increased recently in the context of increasing labour shortage. This is what is perceived negatively by all the players.

> *"Nowadays we can't just send people away if we are not satisfied with their work, but we have to cajole them. …. the Hungarian pepper (a type of long red pepper grown in Hungary) story: first question: are you color blind? No. Well, then we explain to them that the Hungarian pepper needs to be picked when it is red, otherwise it cannot be sold, it will be thrown away. Then you go to check up on the work, and see that it's all green… you feel like you just go insane, you would fire them immediately. But then you look around and see the one million pepper that needs to be picked in the next 2-3 weeks and you know you won't be able to do it, and then you weigh it up what is better, that I am the cool guy who fires them, tells them off properly, or I* just swallow and don't say anything… because these people don't know that our first income is only in June and we only start producing profit from late-August, September. They don't know that a young plant costs 250 Ft!*"(Interview_K9)*

Analytical Dimension 2: Tools and policies for development and cohesion

The change of regime caused a serious employment crisis in the region, but in contrast to the tendencies typical in other parts of the country, the major industrial and food industry factories as well as the strongest large-scale cooperative, although with largely restructured organizational structures, continued to operate in Szentes. Thus, after the regime change, the economic structure of the city did not change fundamentally, agriculture, food processing, transportation, warehousing and trade remained dominant.

The city authorities tried to promote the development of the local economy and to strengthen its significance for employment levels by improving the competitiveness of traditional local economic and farming activities on the one hand, and by introducing new industries with higher added value by creating a local industrial park and stimulating investments on the other. According to the mayor, it is only through such investments that higher wage levels and higher prestige jobs can be created, which is essential for reducing and stopping the outward migration of the population. The city also considers it a priority to further strengthen its high-quality and wide-ranging public services, providing up-to-date infrastructure to serve the nationally renowned high school education, comprehensive secondary vocational education, high-quality inpatient and out-patient care and remodelling social services to meet today's needs. In the opinion of the representatives of the local authorities, without strengthening the role of the city as a regional centre, and the retention and further development of the high level of services, Szentes cannot become an attractive investment target. The third priority of the development policy of Szentes is the establishment of a natural local environment which is healthy, liveable, suitable for recreation, and for offering services for tourism.

The parallel, mutually reinforcing support of these three directions of development has permeated local development policy. The tendering activity of Szentes and its ability to raise funds was outstanding not only in comparison with the surrounding settlements, but also in a broader comparison, which can be attributed to three factors: firstly, the excellent professional and political relations of the local economic and political leaders, secondly, to the wide-ranging cooperation also permeating development policy, and thirdly, to the fact that for decades, city lead-

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ership, cooperating with key players in the local economy, has been working on a concerted, jointly developed and professionally well-prepared vision of the future.

It is due to this fact that the successful tenders of the enterprises of Szentes do not only have a broader sectoral reach, but they also show higher average value. In agricultural economy, machine procurement and technology development are dominant too, but besides these, projects related to quality assurance and modern corporate governance also appear. The size structure of the winning businesses is balanced, and alongside larger businesses, small and medium-sized enterprises are more widely represented. Local authorities and micro-regional organizations have achieved significant results in the development of human infrastructure and the substantive development of services - essentially all service units have been renewed in their infrastructure and material facilities, and in recent years the focus has been shifted onto the development of content services and energy rationalization. The development of the municipal infrastructure involved almost all important areas. Rehabilitation of the town centre, the renewal and extension of the public utility network (canal, rainwater drainage, drinking water network) and the wastewater treatment plant, the modernization of the district heating system, the development of a broadband internet network, the development of public lighting, the rehabilitation of the Kurca River, the renovation of the thermal bath were all accomplished as part of a significant local development project in the post-EU-accession period. These projects were complemented by national road network development, flood protection and environmental projects, which also affected the city and its surroundings.

The tendering activity of the examined settlements and their ability to raise funds cannot be described as significantly different in either positive or negative terms compared to the settlements of similar size and location.

In the post-accession period, successful tenders were typically associated with larger settlements and businesses, so Mindszent, Szegvár and Fábiánsebestyén, albeit of different sizes, nevertheless received a similar proportion of development funds. The development of the technology of larger agricultural enterprises (purchase of machinery, manure storage, vegetable packaging) was the most important local development. Typically, the municipal infrastructure development programmes accelerated after 2007, when regional (DAOP, then TOP) funds were able to renew the institutions of local public services and to renovate the centre of the settlement in several stages, and to move forward in the development of the local public utility network. Thus, from then on, local development was characterised by the dominance of local government, in particular, increase in the quality of local public services and utilities, as well as the creation of a liveable and healthy environment. Their public employment projects also typically focused on the development of settlement management and local public services. They could play an indirect role in economic development by supporting and assisting local business applications, mainly on the basis of their political relations.
With regard to Mindszent, the fundraising ability of the settlement, which has appreciably increased since 2010, is explained by the close relations of the settlement, and of some families living there, with the governing parties. The successes of all economic development tenders can be linked to seven local businesses, which each completed several (2-5) successful projects. In Fábiánsebestyén, the municipality managed the most successful applications, and there was no winning GOP project in the settlement. In Szegvár, the local government's environmental projects (sewage, drinking water) and the human development of local institutions were the most successful, in addition to the few economic development projects.

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4. The Action

4.1 Basic Characteristics of the Action

The fundamental restructuring of the agricultural sector in Hungary in beginning of the 1990s resulted in a polarised ownership and production system with large farms, on the one hand, and extremely fragmented small plots, on the other hand. Cooperation between producers operating in the horticultural sector was meant to reduce the vulnerability of smallholders and auxiliary producers and prevent mass pauperisation of the lower ranks of the rural population. The Producers' organisation (PO) to be presented in this case study represents a significant societal integrative force which is further emphasised by their particularly important role in job creation and promoting the livelihood of its members (suppliers to the PO) with the opportunity of gaining income through exploitation of their own landed properties as self-employed or micro-entrepreneurs. DélKerTÉSZ was established as a Producers' Organisation during the pre-accession period in 2002, approved as a permanent Producer Organisation in 2004 and has been operating since then with an ever growing membership from 230 in 2002 to 521 in 2017 impacting the livelihoods of approx. 5000 families.

DélKerTÉSZ is immediately preceded by the Korai Zöldségtermesztési Rendszer (KZR) [Early Vegetable-Production System], developed at the site of Árpád Téesz in Szentes (Csongrád county). Established in 1975, KZR was the first vegetable production system in Hungary based on a Dutch model (Csikai et al. 2010). KZR did not only imply the coordination of production but also the common marketing of fresh vegetables produced by its member farms, whose number reached 3,500 by the mid-1980s (Tamási, 1986).
The process of structural transformation starting in the early 1990s has resulted in the dissolution of the KZR: the member farms became primary producers or individual or joint businesses, while part-time farmers gradually quit production.

With the participation of the management of Árpád Cooperative and former KZR members, the Délalföldi Kertészek Szövetkezete (DélKerTÉSZ) [Cooperative of Southern Plain Farmers] was established in autumn 2002 with 236 members and a headquarter in Szentes. Two factors played a role in the establishment of this organisation: one, the decreasing profitability of vegetable production from the second half of the 1990s on; and second, the availability of subsidies allocated to agricultural producers following Hungary's accession to the European Union3. „We thought that if we can, then we should try to get hold of those subsidies and the decision was, let's do it!"

Upon establishing DélKerTÉSZ the founders have formulated social and economic goals alike: the organisation should provide a secure income to the farmers of Szentes and its surroundings, whether they are individual, family or joint businesses. While establishing the organisation's profile, the issue of territorial and sectoral coverage was raised. The management of DélKerTÉSZ in the end decided to integrate the vegetable producers only, at the same time defining the territorial scale quite broadly: the organisation's territory of operations was extended to the neighbouring counties (Békés and Bács-Kiskun).

[3] Preliminarily recognised POs could, besides investment resources, receive 12% of members' income. Following final recognition, TÉSZs could use 4,9% and later 4,6% of their income as operational subsidies.

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Around the time of the organisation's establishment the founders had to provide answers to the following two questions. One was whether the PO should be linked to Szentes, and within it to Árpád Ltd, or whether an autonomous organisation should be the aim. The other question was what type of organisation they should choose. The founders decided in favour of an autonomous organisation. To the question why they expanded beyond Szentes, the long-time director replied: „because otherwise all these smallholders would have gone bankrupt, whether in the city or outside of it." Regarding the type of organisation, they apparently had no choice, as up until 2008 the ministry only permitted registering TÉSZs (Termelői értékesítő szervezet) as cooperatives.

DélKerTÉSZ was among the first in Hungary to acquire preliminary TÉSZ-recognition, in 2003. A year later it gained final recognition, which made it eligible for operational subsidies opening the space for measured investments. The organisation has continuously been expanding and counted 480 members in 20184 5. Since its foundation one and a half decades ago, the functioning of DélKerTÉSZ has from an economic angle been characterised by continuous development.

The tool of modernisation undertaken by DélKerTÉSZ consists of coordination from production to marketing, and of guiding transformation of the produced species and technological change. In 2010, the cooperative took steps towards protecting „paprika from Szentes", including the recognition of its protected geographic origin (PGI), in order to ease the product's immediate identification by consumers. The cultivation area of „paprika from Szentes" now comprises eight settlements6, essentially covering the former KZR.

[4] According to Decree 120/2003. (XII. 2.) FVM, preliminarily recognised PO
[5] A 120/2003. (XII. 2.) Decree of the Agricultural Ministry set the condition of 125,000,000 HUF turnover per year (500,000 Euro) for a preliminary recognition of producing organisation, which equalled 250,000,000 HUF (996,000 Euro) for permanent recognition.
[6] Derekegyháza, Fábiánsebestyén, Felgyő, Mindszent, Nagymágocs, Nagytőke, Szegvár, Szentes

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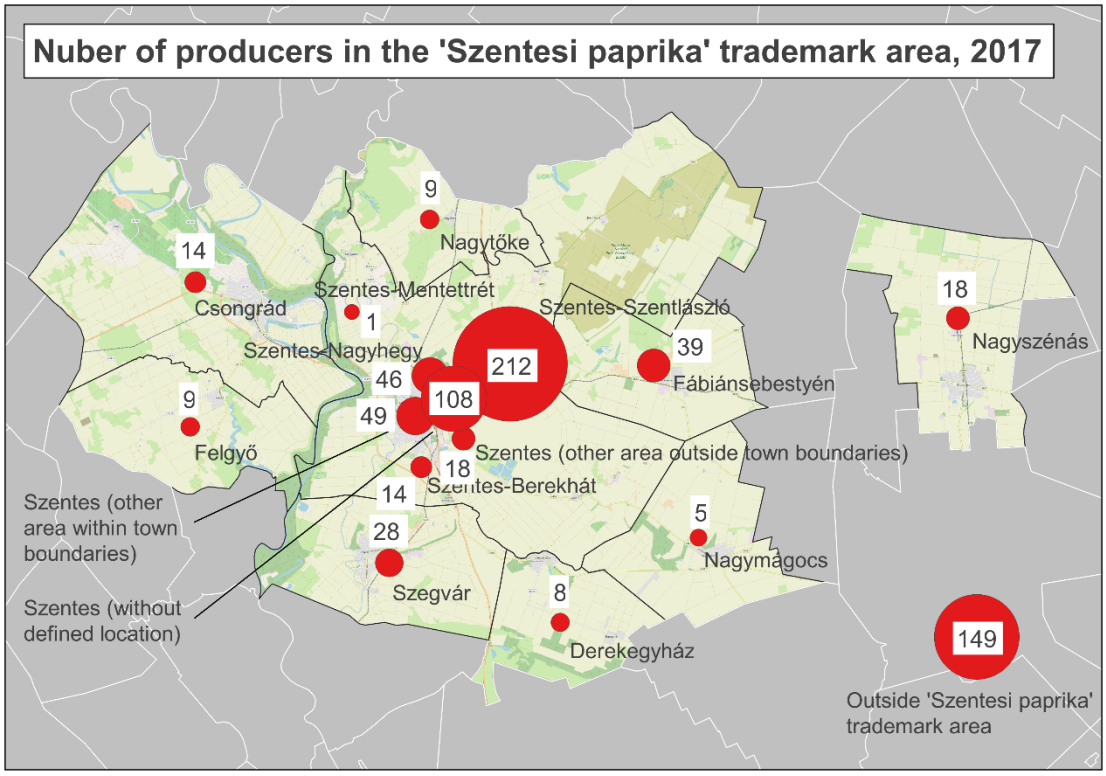
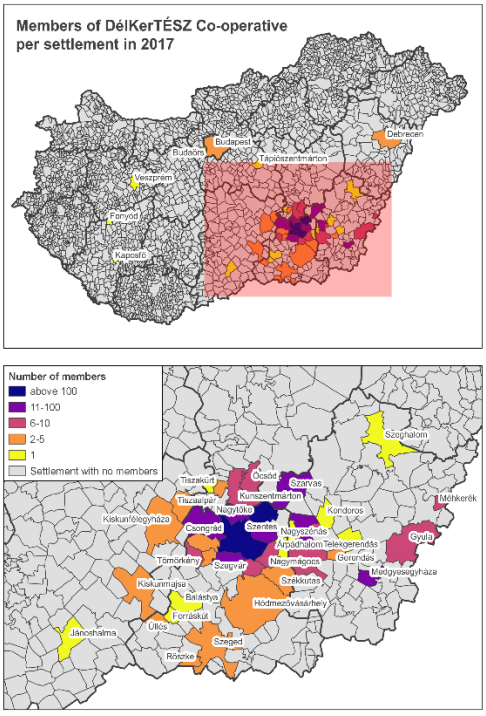


Map 1: The geographic location of the members on the territory of the trademark „paprika from Szentes" and beyond



Map 2: The geographic distribution of the members of TÉSZ

The operational stability of DélKerTÉSZ benefits from half of its turnover stemming from Árpád Agrár Ltd (i.e. the former Árpád Téesz), the cooperative's co-founder. Cooperation with Árpád Ltd enables access to sectoral innovations which DélKerTÉSZ and its members would not fi-

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nance due to their economies of scale. In exchange, the management of Árpád Ltd expects a continuous technological development by the member farms. As formulated by the management, „the leadership needs to be empathic, but technology isn't a question of democracy, it doesn't allow for contradiction or minority report". (Table 4)

Title	Funding source	2009-2013 total (€)	2014-2018 total (€)
Operation Subsidy	EAFRD	5, 112, 365	4, 489, 438
	National top up	1, 514, 947	3, 821, 321
School-Fruit Program	National top up	44, 094	208, 619
	EAFRD	98, 145	168, 928
Extra support for the fruit-veg sector	EAFRD	61, 633	
Rolling Capital Loan Program	National top up		68, 840
Modernisation of Gardening	EAFRD	100, 446	
	National top up	33, 482	
Total		**6, 965, 114**	**8 ,757, 145**

Table 4: Subsidies drwawn from EU and national funding by DélKerTÉSZ

Source: Own calculations from figures of subsidies gained by the Sunshine PO published by the Hungarian Treasury (Paying Agency) under the XVII Act of 2007

4.1.1 The vulnerability-ladder around the PO and its producers

The bottom: workers recruited by work agencies through brokerage

The most vulnerable social group in the locality, which has emerged recently are day labourers working in greenhouses or foil tunnels, who are recruited by so called brokers from deprived territories of the country, where long-term unemployment, miserable living conditions and extreme poverty prevail. Those who are forced to be subject of such a temporary work deal, have rarely had the expertise needed in gardening, therefore they are not knowledgeable at all. No accommodation is provided for them, therefore they get up at 3 a.m., work throughout the day, and are transported back when the shift ends at six or seven in the afternoon. Consequently, they are exhausted, especially because they are usually not used to heavy physical labour. Malnutrition also influences capacities to work. Finally, the reproduction of extreme poverty is guaranteed, because of the double exploitation they are exposed to: the broker who brings them by bus from for example Ózd (220 km far from Szentes) to the site of the work agrees with the producer at a certain labour cost (usually hourly rate), but he pays much less to the labourer, and pays it only randomly.

> *„[For the temporary work agency] nothing matters. We agree on the hourly wage, he pays only part of it to the workers, and then he makes them work hard throughout the day. The 'labour-broker' (bandagazda) asked me to give every day a lump sum after all the workers. Good. Then one of the workers comes to me: how many hours did I work yesterday? Because I got this and this much. And he shows it to me. Listen, I said, the deal with your boss was that I can't tell you how much hourly wage we agreed on with him. … It turned out that he only gave a wage for 5 hour work to the person, whilst provided more to the other, the third one received even less, because the guy thought that should be enough for her,*

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> *wages people were given had nothing to do with the amount of work they actually undertook... Then we realized that we should not work under these arrangements. We drew a circle with a radius of 50km, we bought four vans, and we try to recruit workers with this method. You can commute 50km in an hour, it is still a managable distance."(Interview_K9)*

Migrant workers

Employing migrant workers from neighbouring countries with a lower wage level (e.g. Romania, Serbia or Ukraine) is still rare, but it has been increasing among the producers. The reason for this is twofold. On the one hand, wages offered by the vegetable producers are not attractive enough for migrant workers. On the other hand, most entrepreneurs fear to employ them exactly for the same reason. "*For somebody, who left his family behind to work 300 km from the Austrian border, where he could earn three to five times more than here, it does not matter. He just leaves from one day to the other*" – explained his reluctance towards migrant workers one of the growers (Interview_K9). His fear was justified by the experience of another interviewee, who tried to employ Hungarian speaking Ukrainians, but due to the relatively low wages he could offer, the Ukrainian workers quickly moved further towards Austria (Interview_P11).

Others, like a carman in the packaging area, was convinced that Ukrainian and Serbian labour is still available, and the PO should work with them. "*The Ukranian and Serbian workforce value their wages and do work 12 hours without a word*" – he said. (Carman, Field_notes_packaging_area).

Middle rank: local labourers exposed to grey or semi-grey employment arrangements

The labour market of the South Great Plain region has always been characterized with informal employment, due to the wide-spread labour-intensive horticulture. Since 1997, when a first iteration of the legislation on so called simplified employment was stipulated, grey employment has "whitened" to some extent, especially since 2009, when the second iteration of the law came in force with more severe arrangements accompanied with regular controls by the Labour Office.

> "*Once I was coming out, and I saw that there are people with guns and dogs on my estate. I asked what they wanted, and they said they were looking for illegal workers. So it was the end of reciprocal mutual help, since how could I prove that my aunt or colleague works in my garden in exchange that I worked in theirs a week ago?" (Interview_P1)*

The long-term impact of illegal employment of labourers is obviously detrimental not only because very few of them are able to set aside substantial savings, but also because female workers necessarily lost eligibility for the so-called early retirement scheme available since 2012. During our fieldwork we have come across two female workers in retirement age, who were unable to prove the condition of eligibility, which would be 40 years of employment. When working along and discussing with women during participant observation under the foil tunnel, it turned out that one of them was forced to work at the age of 68 exactly for this reason.

> *Erzsike was employed by one of the agricultural co-operatives during the socialist era. After the collapse of the agricultural cooperative in the 1990s, she worked in greenhouses mostly under grey arrangements. Even if she spent her working life in greenhouses, due to*

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> *illegal employment she could not prove that she had a 40-year-long working relationship. Therefore she was not entitled to early-retirement.*[7] (Field_notes_greenhouse).

Those who work nowadays under the above-mentioned 'simplified employment scheme' will also realise the negative impact of this form of employment on their pension. Since no social security tax is paid after them by the employer, and the contribution to the pension fund is extremely low as well, low income is guaranteed for old age pensioners with significant amount of previous employment within this scheme[8]. Moreover, as our interviews revealed, even this employment scheme is regularly abused by many of the growers, when they exceed time-limitations set by the regulation[9]. It is very common during the high season that about a quarter of the working time of the labourers is used illegally, in spite of the fears that a Labour Office control might result in an investigation against the employers. This is why we consider this form of employment semi-gray

There was only one interviewee who spoke with sympathy about those affected by the scheme and who did not agree with their hiring through simplified employment (Interview_K8).

> *"We can't afford to be crooked with anyone, because they would just quit and leave us within an instant. Why don't we employ these people properly? Let's pay them well, tie them to us.*
> *'But Mr. President, I was told, they don't want it! They 've got arrears to pay, the tax office will immediately deduct these from their wages if we hire them. They don't want it!'"*

Elderly people

Elderly people, mainly women, most of which worked formerly in one of the socialist agricultural cooperatives in Szentes or the surrounding villages, still provide a much-appreciated pool of workforce for the vegetable growers and for the Producer Organisation. Their motivation is clearly existential: they need to earn pension supplement. Vegetable growers and the PO are highly interested in employing them for a number of reasons. Most of these elderly people belong to the group of 'habitual gardeners' and represent a tough, reliable and highly experienced group of labourers (for example they easily work in 40-50 Celsius in greenhouses). (Field_notes_packaging_area). Moreover, employing pensioners is cost-effective, since retired labourers are much less taxed, than their active-age counterparts. During our field work we met a 79 year old retired man, who has been an appreciated old member of the "crew" in an enterprise, where the old leader of the enterprise, 75 year old himself, used to be his brigade leader during the old days of the agricultural co-operative. Now they are both retired, but the younger leads the enterprise, while the older works daily on- and off-season alike (Interview_DL_5_6).

Women, Roma people, "locked-in" people

[7] The amendment of the LXXXI Act on social security and retirement benefit in 2010 granted those women who could prove 40 years of labour relationship with full old-age retirement Act in force No LXXXI. of 1997. on social security and retirement as consolidated with the Government Decree No 168/1997. (X. 6.) on implementation

[8] Act LXXV of 2010 on Simplified Employment https://net.jogtar.hu/jogszabaly?docid=A1000075.TV

[9] According to the Labour Code (Act no I. (LC) and that of the Act no LXXV per 2010 on "Simplified employment" the maximum duration of seasonal or occasional employment is 15 working days per month and one cannot employ more labourers than 20% of his/her total number of employees. Wages were revised in 2018, when daily remuneration for seasonal and occasional workers was fixed in 8,255 HUF (25 €) and 10,790 HUF (33 €) respectively.

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Both in the visited greenhouse and in the packaging area of the PO, women were overrepresented among the workers. They themselves explained the significantly higher ratio of female labour with low wages. According to one of the women in her forties

> *"This job here is not worth for a man. They refuse to work for such a low wage. Men in Szentes rather choose to become masons, painters, decorators, vegetable producers or they take a job in the Mercedes Factory in Kecskemét* [a city 65 km far from Szentes]." (Field_notes_packaging_area)
>
> Tibor (a Roma man in his forties), who was working close-by, did not comment on this, despite – being one of those male labourers, who worked for "*a wage which is not meant for men*" –most probably he did not feel good about his colleague's explanation. (Field_notes_packaging_area).

Many of active age people, like Erzsike, have found refuge at various phases of the crises affecting the local labour-market through working in greenhouses or becoming gardeners themselves (Interview_P10 and P11). As of today, a part of the active age people seem to get locked into casual work in greenhouses. Ancsa is an accountant by education in her forties. She used to have an office job, but currently she does not work in any corresponding job. Instead, she works in the greenhouse along with Erzsike. The participant observation of Melinda Mihály revealed a lock-in effect.

> "*On the first sight it seems that Ancsa decided to do gardening freely, from passion, but after a longer talk with her I got the feeling that doing work in greenhouses is rather a constraint for her. Her previous job was at a funeral business. She used to work there as a funeral organiser, but she lost her job. This was the time when she chose to work in greenhouses. Through our talk I had the feeling that she would be glad to have an office job, but the lack of language skills and the lack of a chartered accountant diploma hinder her in finding a decent office job."* (Field_notes_DL3_greenhouse by Melinda Mihály)

The PO itself has "whitened" its operation fully during the past decade and offers employment on average for 160 permanent employees, the majority of whom work in the storing and packaging department. They usually work extra hours (sometimes even 1.5 shifts) in the high season from May to October, when seasonal labour is also hired and paid in the framework of "simplified employment". The situation is similar in the case of big producers, most of whom have been shifted to legal employment (at least considering the core staff of their employees).

> *To give an example, one of the biggest growers, who runs two hectares of intensive horticulture, two thirds with heated, one third with non-heated greenhouses, permanently and officially employs an average of ten people and hires roughly 30 seasonal workers from May to October*. (Interview_K9)

Both the PO and the biggest producers were keen to improve working conditions in order to attract labourers. The packaging area of the PO was extended and air-conditioned some years ago; this is where small and middle-scale producers can sort and package their products. Bigger producers can claim sorting devices from the PO. These devices are accommodated in so called "social buildings", most of them also air-conditioned of the individual members.

> *"Since we work with a 3 hectars floor-space, we have built a 600 sqm building for storing and for cooling. We also built social buildings. We try to advance quality, in order to make it a normal work place. To make the people working for us feel that we take care of these."…* (Interview_K9)

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Intensive gardening demands a high number of knowledgeable and devoted workers. Labour demand has been increasing fast and steeply in the study area for two main reasons:

a. responding to the significant decline of the profitability of vegetable growing, producers were urged to intensify their production, thus compensating for the cheaper sales prices. For example soil-less farming as a major technological innovation has spread in the last decade to an extent that today 100% of the vegetables under greenhouses and 90% of those under foil tunnels are produced without soil and are "nurtured" artificially by computers. This innovation doubled, and in some cases even tripled, the amount of products that have to be picked quickly and more or less all at once in 150 gardening enterprises. This generates a huge labour demand;
b. another trend, which had an impact on labour shortage, has been influenced by a problematic generational renewal in the sector. Many former "habitual" gardeners became old and retired. For the young generation, daily work under the foil tunnels is less attractive. They are not so eager to start five in the morning and continue work until late night, when the picked product from morning is waiting at the warehouse sorted and packed for being transported. They rather opt for a job at the assembly lines in the nearby Mercedes factory, or try the life of a migrant worker abroad.

The gap left behind by retired and opting out young labourers is filled in with workers who usually lack adequate skills and capabilities needed for the tough working conditions, therefore the fluctuation of day labourers or their absence have become a serious threat for most gardeners.

> *If we haven't already employed at least a thousand people, then none at all, maybe even more than a thousand. Earlier, if a worker was not sufficient, I went over to him/her and told that "we wanted something else" or something similar, we said good-bye to each other and the next day we went to Superinfo to post an ad. Plus we are quite big farmers and quite well known in the city, so often in the evening people came over to our house to ask if there is any work, if they can come to work. Now, we have a group, the same group from Gádoros, which is about 30 km from here, who has been working for me for seven years now, we insist keeping them." (Interview_K9)*

4.2 The Action with regards to Dimensions 3-5

Analytical Dimension 3: Coordination and implementation of the action in the locality under consideration

DélKerTÉSZ is continuously providing support to its members in order to realise technological development, through for instance financing inputs and agronomic expertise. The system of expertise provision in the cooperative was organised on the basis of a Dutch model: the producers are regularly visited by nine experts, and members are participating in trainings – so-called „plant circles". Despite intensive advising, the harmonisation of species and technology has led to the selection of members and the extrusion of smaller plants from TÉSZ. Losing ground is largely the consequence of spontaneous exits and to a lesser extent of exclusion due to defaults in technological advancements (Ledó, 2014).
Production coordination at DélKerTÉSZ is based on special incentives and sanctions. The cooperative is paying a bonus at the end of each year, based partly on the quality produced. Further conditions include that the farmer delivers 100% of the production to the cooperative, and during production draws on the expertise provided and the input-materials recommended. Boni are covered by the financial results achieved. The most radical solution of the sanctioning toolkit is exclusion, triggered by failure to meet membership-related requirements. During the period of transition to biological plant production, for instance, there was a year when 10–12

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members were excluded from DélKerTÉSZ. According to the management, with changes introduced in its charter the organisation has experienced a profile purification.

Analytical Dimension 4: Autonomy, participation and engagement

Producer organisations face a number of internal challenges. One of these challenges is that the market expects them to be efficient in decision-making (Fodor 2013, 68), which would push them towards a professionalised management system. The ideal of a professionalized management system is in conflict with the ideal of economic democracy, which is a basic value of cooperatives, and which would allow to channel producers into decision-making processes. This tension between mainstream professionalized decision-making and economic democracy characterizes the internal dynamics of the Szentes PO.
Both de facto and de jusre, the main decision-making body of the PO is the board, chaired by the president. The general assembly and the delegate assembly are democratically elected, but they are rather uninformed about the backgrounds and consequences of decisions (and the financial plans). This hinders them to actively shape the final decisions.

The board and the president. The founding president of the PO – who has currently resigned – used to be a chief gardener in the Árpád Ltd. He was, and he still is supported by all the producers we talked to (Interview_P4, P6 and Group interview_P7). His legitimacy has been full and unquestionable over time.

> *"I knew him [the former president of the PO] beforehand, and I knew that he is really an agile and ambitious person. He was born to be a leader." (Interview_P4)*

The high level of trust between the members and the president of the PO allowed the organization to be led easier, but it also resulted in a relative dependency on one person, who, nevertheless, was conscious about training his successor. The new president of the PO (since January 2019) was previously the financial manager of the PO.

Board members. Since 2009 four board members are elected for five years, and two of them represents the Árpád Ltd (the biggest supplier of the PO). Even though before 2009 everyday gardeners could become members of the board, they could barely influence the direction of the PO. This is how a small-scale vegetable producer remembers the period of his board membership:

> *"I felt good in those three years, but if I want to be self-critical, I have to say that (…) we were not prepared enough. (…) We needed to take financial and economic decisions on the board meetings. We [the PO] needed to meet requirements of the Agricultural Ministry. [Our president] outlined the agenda, but we could not comment on it. We thought if it is good for him, it should be OK for us too." (Interview_P6)*

General assembly. There is a general assembly once, maximum twice a year. The role of the general assembly is to approve the financial plan of the year, which had been prepared by the president and the financial manager, and which was already approved by the board. The most recent operational plan (2019) would increase the wages of employees of the PO. Further refurbishment of buildings are also planned (Interview_P6).

Delegate assembly. The main motivation of setting up a delegate assembly beyond the general assembly was practical: organizing a general assembly was more challenging, than to organize a delegate assembly. (Group interview_P7) The delegate assembly was set up 3 years ago (Group interview_P7). Everything that falls within the decision-making competences of the general assembly is first presented and accepted on the delegate assembly (Interview_P6, Group interview_P7). The delegate assembly meets once, twice or three times a year (Interview_P6). The 53

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delegates were nominated by the board and voted by the general assembly of 493 members (Interview_P4, Group interview_P7). According to some of our interview partners, the following criteria mattered in nominating the delegates:

- A producer on whose presence the presidency can count on
- An honest supplier
- There was no distinction between large and small-scale producers (Group interview_P7)

Since the introduction of the delegate assembly, only what has been voted by the delegate assembly goes forward to the general assembly. However, neither the delegate assembly, nor the general assembly has considerable influence on the strategic directions of the PO. The strategic decisions are taken by the presidency (mainly by the president), and neither the delegate assembly, nor the general assembly debates these materials beforehand. Their function is to accept it (Interview_P4, P6).

> *"Being a delegate is like a bunch of numbers being told to you about financial and economic issues of the PO in the previous year, which are usually so nice results, and basically one votes to approve this report. There might be one-two or ten questions that they answer, but the PO functioned so well in the past years, that there was nothing to criticize about it." (Interview_P4)*

It seems plausible to state that the current decision-making mechanisms empower the producers to influence the direction of the development of the PO only to a limited degree. The more professionalized decision-making structure since 2009 has been effective, but it reduced the space for democratic mechanisms of the co-operative.

However, it does have an impact, that in some way or another, but each leader of the organization is at the same time a producer of the organization. A nice illustration for this is connected to the new president. Until he was only the financial manager, there were no expectations towards him to be a producer. But he could only became the president, after he bought 600 sqm of foil tunnel space. The reason for this expectation is to share a common risk with the producers on the one hand, and simply to understand the perspectives of a simple producer on the other. „*The family of Feri used to go on vacation to the Mátra mountains. When they returned from vacation, they never came on the highway, but on the small roads from behind, in order to take a look at their foil tunnel. Feri always represented the interests of simple small-scale producers, since he was one of us…*" When in January 2019 the general assembly approved the change in presidency, it was done with a total respect towards both the resigning and the incoming president.

It seems that an era has just ended in the history of the PO. Besides the professional operation, this era was characterized with an all-encompassing aura of trust, and with a leadership based on personal guarantees, humanity, good-will and commitment. The new generation of leaders and members will bring not only a new style of operation, but probably new directions as well.

Analytical Dimension 5: Expression and mobilisation of place-based knowledge and adaptability

One of the interviewed producers declared with self-confidence: "we have got here everything which is important from the point of view of intensive gardening: people, sun (light and heat) and thermal water. (Interview_P_1)

As we have pointed out in earlier chapters, skills of gardeners in the study area are historically shaped 'habitual' asset that is owned, having in disposal of the leaders of the PO, its members (producers) as well as their permanent workers. This knowledge is obviously place based although the action itself is not.

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The other important asset is geothermal energy taken through more than a hundred wells in the Trademark area due to the crucial significance of energy to the quantity, quality and economy of intensive vegetable production. Nowadays in Hungary, modern technologies capable of delivering marketable production require large-sized, well-ventilated, heated greenhouses or foil tents between December / January and May. In order to supply these with thermal energy, besides geothermal energy several conventional methods for supplying heat can be used such as solid fuel (firewood, wood chips, sawdust, pellets, charcoal) or natural gas (gas tanks), heating oil, or some new methods like heat pumps or energy derived from sun or wind power plants. However, the cost of the production of the required heat energy is significantly lower for geothermal energy than for the other methods. (See more about geothermal energy in the Annex 8.4.2)

Greenhouses with state-of-the-art technology are also solely in the hands of big capital joint companies, thus family farms, or small farms employing only a few people, are typically taking part in plastic tunnel farming using secondary water, and / or in unheated plastic tunnel farming. However, the need to increase yields in this horticultural segment also requires the development of technology, which is an almost impossible task without participating in tenders. However, participation in tenders requires long-term commitment, a business plan, sales of sufficient vol-ume and an own contribution. These constraints explain the visible decline in the number of independent small farms, and the rapid growth of the average income and the size of the culti-vated area per small farm, i.e. the accumulation and professionalization of production. (See Figure 1 in the next chapter)
Hungary's EU accession resulted in an increased price competition for vegetable producers. To stay alive in the context of increasing market competition, the Szentes PO facilitated among the gardeners the implementation of new vegetable production technologies as a major tool for adaptation, through which the proportional yields per plants could have been increased. Hydroculture was one of these technological innovations. Jenő was amongst those who applied hydroculture first in his garden (See photos in the Annex 8.3.c. 1-5.).

> *"We were the very first. We were around 4-5 people that cooperated. The PO was really generous (…). They said they would pre-finance the [hydroponic] mats for us. Coconut was the material of the mats that time. They pre-financed our mats through another 100-day-long credit that time. We were really afraid. We also invested in an irrigation system, which was not a small investment either. When we started we were really surprised that we could harvest one and two weeks earlier. The plant was really intense and fast in growing and it produced a very good quality too. It was almost incredible! We had a learning year, but I have to say that it is easier to produce without soil than with soil. The plant can get easily infected in the soil. (…) Soil-less cultures are simpler, but not less demanding. Because of the control, we have to spend the same amount of time, or sometimes even more in the greenhouses, as earlier."* (Interview_P4)

With the increased economic risks, which came with the investment in the implementation of a new technology, the pressure increased on vegetable producers not to make any mistake.

> *"This hydroculture was a large step for us too. I have not seen it before, only on photos, videos or gardener's fairs. This implies a complete shift in mind, technology, in everything. We left the roots of the plants to rot in the first year. We learnt from it, but with such an investment, you have to pay 20 million HUF yearly for 10 years, thus you should not allow yourself to let the roots to rot any more."* (Interview_P8)

The shift to hydroculture implied the need for an investment in an irrigation and fertigation system. As the vegetable producers did not have enough money to invest in the latest Dutch

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systems, they searched for cost-effective solutions to solve automated irrigation and fertigation. The solution of Jenő was to order an irrigation and fertigation system, which would have originally costed 3 million HUF, from a local mechanic, for the quarter of the price of the original system. This machine automatically measures the electrical conductivity (EC) and the pH of the plant. The Family Molnár (Group interview_P7), which lives outside the Szentes area, solved this issue differently.

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5. Final Assessment: Capacities for Change

Capacities for change are crucial at DélKerTÉSZ Producer Organisation from a number of aspects, most of which have been pointed out earlier in this case study. First of all, its development potential has been enormous, expressed in impressive augmentation of turnover and equity (three times more in 2018 than in 2003), membership and fixed assets (twice more in 2018 than in 2003).

As has also been emphasised, the PO is a profit-interested enterprise that shares part of its wealth with its members in exchange of efforts they had made with regard to biological plant protection. This gesture has been in line with the values / convictions of the retiring president, according to whom the co-operative should be run based on non-profit principles. The president also claimed himself to be somebody always paying attention to the interests of small producers. It was his main concern when the co-operative was established and has remained so ever since. "I urged that we should establish a PO for the whole region and not just for Szentes or Árpád Ltd. since I was aware of the danger of the small producers getting bankrupt would they not join a PO." (Interview_K_1)

However, despite being a protector of small producers, the president of DélKertész could not – and most probably was not willing to – block the gradual shifting of the PO towards capital-driven operation. As it has already been introduced in a number of contexts, the adaptation pressure on producers has always been high in the 16-year history of the PO. The co-operative supported its members substantially but not fully when they were forced through competition to invest to change technologies in order to make sure the growth of their production. The use of thermal energy was also more and more expensive. To complete the picture, we must also add that the PO was also trapped by growth pressure since eligible subsidies (4,6%) have been based on the turnover of sales.

This explains that the social composition of the membership of the PO changed significantly in the last decade: both the rate of bigger producers (expressed with the category of sales) and the turnover their sales brought have grown sharply, as the figure below illustrates:

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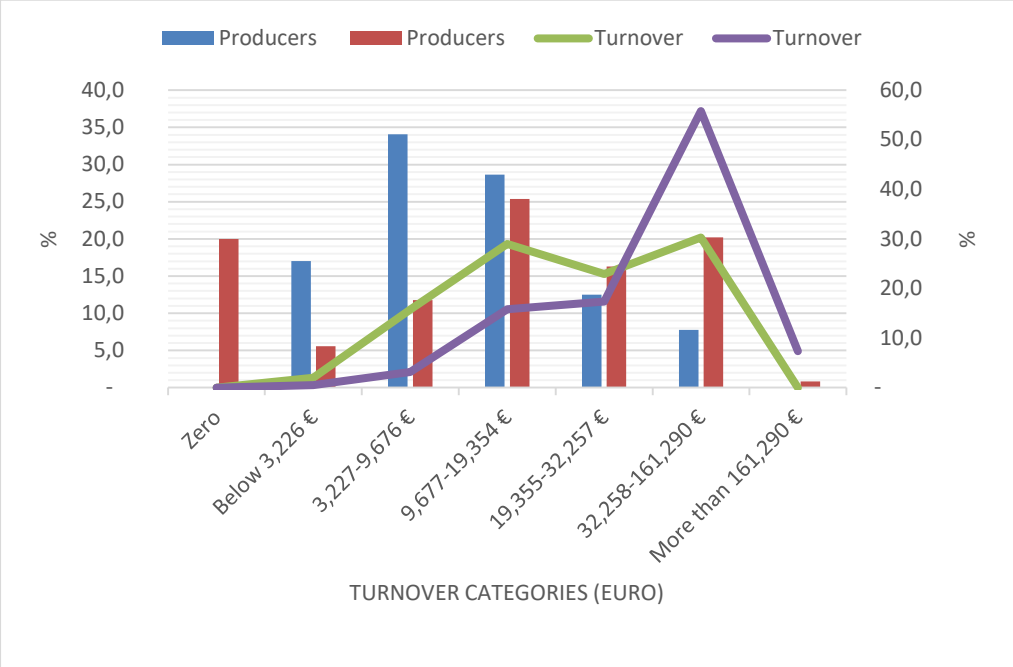

Figure 1: Changes of the social structure of the Producer Co-operative over time

Synthesising Dimension A: Assessment of promoters and inhibitors (in regards to the action: dimensions 3 to 5)

Main promoters of the successful operation of Hungary's largest Producer Organisation (PO) in Szentes and its surroundings are locally determined. Firstly, geothermic energy heating greenhouses, secondly, a partnership established in 1975 have to be mentioned. Institutional and individual learning started already in this partnership yielding by 2003 experienced, eager, disciplined and knowledgeable growers in high numbers. Since the establishment of the PO in 2003, a high degree of differentiation between producers has been taking place ending up in diminishing number of small producers. Those left the PO who lacked capital or family labour or both. From their point of view, PO as a capitalist enterprise inhibits their membership.

Synthesising Dimension B: Competences and capacities of stakeholders

Highly competent and committed leaders helped former co-operative members become quasi entrepreneurs; "empowering" in the context of a capitalist enterprise was not evenly distributed but it was not exclusive either. The social and cultural distances between leaders and ordinary members have remained limited, since leaders of the PO are producers themselves. Trust towards reliable growers still helps overcome critical situations.

Synthesising Dimension C: Connecting the action to procedural and distributive justice

Distributive justice is provided by the PO's services each member has access to, such as the limited amount of credit available to all members, or different facilities provided for growers according to their needs. Procedural justice is safeguarded by established rules meant to serve common interests of members. Those who break rules, have to leave the PO as it happened some years ago with one of the largest and most appreciated producers, when an illegal pesticide was identified in his product.

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6. Conclusions

DélkerTÉSZ is the largest producers' organisation with broad production networks of vertical and horizontal branches penetrating to the vegetable (mainly paprika and tomato) growing sector in a much wider area than that of the Szentes District and beyond. It is also influential since its chief manager (the president) of the co-operation holds the highest position in a national organisation of vegetable and fruit growers (president of FruitVeb) thus plays an important role in lobbying for the interests of the sector and its growers, too.
Developed in the 1970s and still successful today, the "Szentes gardening model" relied, besides the favourable natural conditions, on the historically rooted human skills of the local community: (a) the vegetable production and horticultural traditions introduced by the 'Bulgarian gardeners' (b), large-scale industrial and small-scale subsistence farming production systems, i.e. flexible work organisation models that took community and member interests into account (c), co-operative economic management systems based on partnership and cooperation, characteristic of local society for centuries, such as the establishment of a unique Early Vegetable Growing System in 1975 (d), an open, innovative environment including agricultural R&D as key to the fast spread of new technologies based on € energy.

The PO of Szentes exemplifies (i) a successful exploitation of local potentials (geochemical energy), (ii) valorisation of local human capital (widespread basic knowledge and interest of growers, highly skilled leaders and managers), (iii) clever investment policy based on middle-term strategic planning and an appropriate use of EU and national financial supports, finally, (iv) the combination of all these factors.
Another group of aspects emerging from the case study is social issues related to permanent and seasonal greenhouse workers. The studied intensive gardening has a huge but seasonal labour demand in the study area from May to late October; DélKerTÉSZ producers alone need at least an estimated amount of 2-3,000 people. Socially marginalised labour turns up but is not able to meet requirements – therefore fluctuation is high among its ranks. Instead of these workers, producers are providing on their own transportation services for labourers who live within a 30-50 km radius, thus trying to attract them to the enterprise.

The adaptation pressure on producers has always been high in the 16-year history of the PO. The co-operative supported its members substantially but not fully when they were forced through competition to invest to change technologies in order to make sure the growth of their production. The use of thermal energy was also more and more expensive. To complete the picture, we must also add that the PO was also trapped by growth pressure since eligible subsidies (4,6%) have been based on the turnover of sales. This explains why the social composition of the membership of the PO has shifted towards bigger producers at the expense of the small ones.

As far as the governance of the co-operative and democratic procedures are concerned, it seems plausible to say that the current decision-making mechanisms empower the producers to influence the direction of the development of the PO only to a limited degree. The more professionalized decision-making structure since 2009 has been effective, but it reduced the space for democratic mechanisms of the co-operative. It seems that an era has just ended in the history of the PO. Besides the professional operation, this past 16 year since the establishment of the PO it was characterized with an all-encompassing aura of trust, and with a leadership based on personal guarantees, humanity, good-will and commitment. The new generation of leaders and members will bring not only a new style of operation, but probably new directions as well.

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Outlook
The secondary, social aspect of its operations will likely be further diminishing already on the short run therefore the relevance of the PO in tempering and preventing social vulnerability will further narrow.

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7. References

Csikai M., Takács E., Kruzslicz P., Kovács L. and Nagy Z. (szerk.) (2010): *Ötven év tükrében. Fotók - dokumentumok - adatok a szentesi Árpád Agrár Zrt. öt évtizedéből*. Ünnepi Kiadvány, Szentes: Árpád Agrár Zrt.

Délalföldi Kertészek Szövetkezete (2010): „Szentesi paprika" oltalom alatt álló földrajzi jelzés (OFJ) földrajzi árujelző bejegyzése iránti kérelemhez.

Dudás Gy. and Juhász A. (2013): A magyarországi TÉSZ-ek gazdasági szerepének vizsgálata számviteli megközelítés alapján. *Gazdálkodás*, 57(3), pp. 282-292.

Ledó F. and Nagypéter S. (2019): *Délalföldi kertészek szövetkezete 2002-2018.* Szentes: DélKerTÉSZ.

Szentesi Paprika Ofj Termesztési és Minőség biztosítási Kézikönyve

Tömpe A. (2014): Tízéves a TÉSZ. *Kertészet és Szőlészet*, 2013/14

Tamási M (1986): A kezdettől a KZR-ig. *Tolna megyei Népújság*. 36(153-179).

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8. Annexes

8.1 List of Interviewed Experts

Nr.	Code	Description	Role	Length Hours: minutes	Documen-tation	Au-dior ec.
1.	Interview_L1	The mayor of Szentes. Inter-viewed by Gábor Velkey and Tünde Virág May 2018.	local leader	1:30	field notes	no
2.	Interview_L2	The vice mayor of Fábiánse-bestyén and the plant protec-tion advisor at the PO. He was inter-viewed by Melinda Mihály on the 14th May, 2018.	local leader	2:20	transcription	yes
3.	Interview_L3	The mayor of Mindszent. He was interviewed on the 15th May 2018 by Melinda Mihály.	local leader	2:25	transcription	yes
4.	Interview_L4	The mayor of Csongrád. He was interviewed on the 16th May 2018 by Melinda Mihály.	local leader	1:00	transcription	yes
5.	Interview_L5	The mayor of Csongrád. He was interviewed in October 2018 by Gábor Velkey.	local leader	0:36	field notes	yes
6.	Interview_L6	Vice mayor of Szentes. He was interviewed in October , 2018 by Gábor Velkey.	local leader	0:56	field notes	yes
7.	Interview_L7	The mayor of Szentes. He was interviewed in December, 2018 by Gábor Velkey and Melinda Mihály	local leader	1:14	field notes	yes
8.	Interview_L8	The head of industry Chamber. He was interviewed in May, 2018 by Tünde Virág	local leader	1:48	transcription	yes
9.	Interview_L9	A local history researcher from the archives. He was interviewed in May, 2018 by Tünde Virág	local re-searcher	1:39	transcription	yes
10.	Interview_K1	One of the top leaders of the PO. He was interviewed on the 14th August 2018, by Katalin Kovács and Katalin Rácz.	key actor	3:30	transcription	yes
11.	Group inter-view_K2	Founding members and sales managers of the PO. They were interviewed on the 14th of August 2018 by Katalin Kovács and Katalin Rácz.	key actors	2:02	transcription	yes
12.	Group inter-view_K3	Gardener and one of the mid-dle men of the Árpád ZRT. They were interviewed on the 14th of August 2018 by Katalin Kovács and Katalin Rácz.	key actors	1:30	transcription	yes
13.	Interview_K4	One of the leading gardeners of the Árpád cooperative. In-terviewed on the 17th of Janu-	key actor	1:28	transcription	yes

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		ary 2019 by Katalin Kovács.				
14.	Interview_K5	A supplier-producer of vegetables and sales manager at the PO. Second, follow-up interview. Interviewed on the 17th of January 2019 by Katalin Kovács.	key actor	1:48	transcription	yes
15.	Interview_K6	Member of the PO, plant protection advisor, interviewed on the 16th of January 2019 by Katalin Kovács.	key actor	1:40	transcription	
16.	Interview_K7	Member of the PO, vegetable producer (heated greenhouses), plant protection advisor. Interviewed on the 17th of December 2018 by Melinda Mihály.	key actor	0:40	transcription	yes
17.	Interview_K8	Chief Executive Officer of the Árpád Agrár LTD. interviewed by Katalin Rácz, August, 2018	key actor	1:59	transcription	yes
18.	Interview_K9	Producer, former member of the Leaders' group interviewed on 15th of January, 2019 by András Vígvári and Krisztina Németh	key actor	2:15	not yet	yes
19.	Interview_E1	A senior researcher at the Corvinus University. Earlier he produced a documentary film about the Co-operative named Árpád in Szentes. He was interviewed on the 14th of August 2018 by Katalin Kovács and Katalin Rácz.	expert	1:13	only voice	yes
20.	Interview_P1	Former member of the PO. Larger, heated greenhouses, own thermal well. Interviewed in August 2019 by Katalin Kovács and Katalin Rácz.	producer	1:37	transcription	yes
21.	Interview_P2	Outsider to the PO in Csongrád, scattered farm area. He was interviewed by Katalin Kovács and Katalin Rácz on the 23rd of October 2019.	producer	1:14	transcription	yes
22.	Interview_P3	A gardener consultant, seeds salesman and small producer in Szegvár, outsider to the PO. He was interviewed by Katalin Kovács and Katalin Rácz on the 23rd of October 2019.	producer	0:45	field notes	no
23.	Interview_P4	Member of the PO. Heated greenhouses in the Szentlászló site. They mainly produce Hungarian White Pepper. Interviewed on the 7th January 2019 by Melinda Mihály.	producer	1:35	transcription	yes

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24.	Interview_P5	External member of the PO. Unheated greenhouses and outdoor cultivation of Chinese cabbage in Szegvár. Interviewed on the 22nd January 2019 by Melinda Mihály.	producer	1:20	transcription	yes
25.	Interview_P6	Member of the PO. Area: Szegvár. Interviewed on the 7th of January 2019 by Melinda Mihály.	producer	1:50	transcription	yes
26.	Group interview_P7	Members of the PO, outside the Szentes area. The 3 interviewees (mother, father and son) run a family vegetable producer enterprise. Interviewed on 7th of January by Melinda Mihály	producer	2:20	transcription	yes
27.	Interview_P8	Member of the PO. Interviewed on the 15th of January 2019 by András Vigvári	producer	1:45	transcription	yes
28.	Interview_P9	Member of the PO, former member of the Leaders' group. Interviewed on the 15th of January 2019 by András Vigvári	producer	1:39	transcription	yes
29.	Interview_P10	Member of the PO, interviewed on the 15th of January 2019 by Krisztina Németh.	producer	1:10	transcription	yes
30.	Interview_P11	Member of the PO, interviewed on the 15th of January 2019 by Krisztina Németh.	producer	2:29	transcription	yes
31.	Interview_P12	Member of the PO and his wife, interviewed on the 16th of January 2019 by Krisztina Németh and András Vigvári.	producer	2:11	transcription	yes
32.	Interview_P13	Member of the PO, interviewed on the 16th of January 2019 by Katalin Kovács.	producer	2:10	transcription	yes
33.	Interview_P14	Member of the PO, Interviewed by Monika Váradi on the 15th of January 2019.	producer	1:23	transcription	yes
34.	Interview_P15	Member of the PO, Interviewed by Monika Váradi on the 17th of January 2019.	producer	1:29	transcription	yes
35.	Interview_P16	Former member of the PO. Small scale producer, heated greenhouses. Interviewed by Melinda Mihály in February 2019.	producer	0:20	field notes	no
36.	Interview_P17	Member of the PO. Leader of the Szentlászló greenhouse coop. Interviewed by Melinda Mihály in February 2019.	producer	0:45	field notes	No

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37.	Interview-_Emp_1-2	Two female group leaders of the PO working with selecting and packing Interviewed by Melinda Mihály in January 2019.	employees	1:13 2 days	transcription and field notes Field_notes_packag-ing_area	Yes
38.	Discus-sion_DL_3-4	Two female day-labourers, participant observation by Melinda Mihály in December 2018	male day labourers	8:00	field notes Field_notes_greenhouse	No
39.	Interview-_DL_5-6	Two male foil-tunnel workers interviewed by András Vigvári, Krisztina Németh and Monika Váradi in January 2019.	employees	0:30	field notes	No

8.2 Stakeholder Interaction Table

Type of Stakeholders	Most relevant 'territori-al' level they operate at	Stakeholders' ways of in-volvement in the project (What do we gain, what do they gain)
Local politicians	Local level. Mayors and vice-mayors of the investi-gated localities: Szentes (3), Fábiánsebestyén, Mindszent, Szegvár and the neighbouring Csongrád (2)	Have taken part in individual interviews (6)
Associations representing private businesses	Key actors, producers and employees of the PO	Have taken part in individual interviews (25)
Other local community stakeholders	Chamber (1), Archive (1), outsider producers (3), labourers (6)	Individual interviews (11)
Colleges and universities	Expert, univ. professor	individual interview (1)

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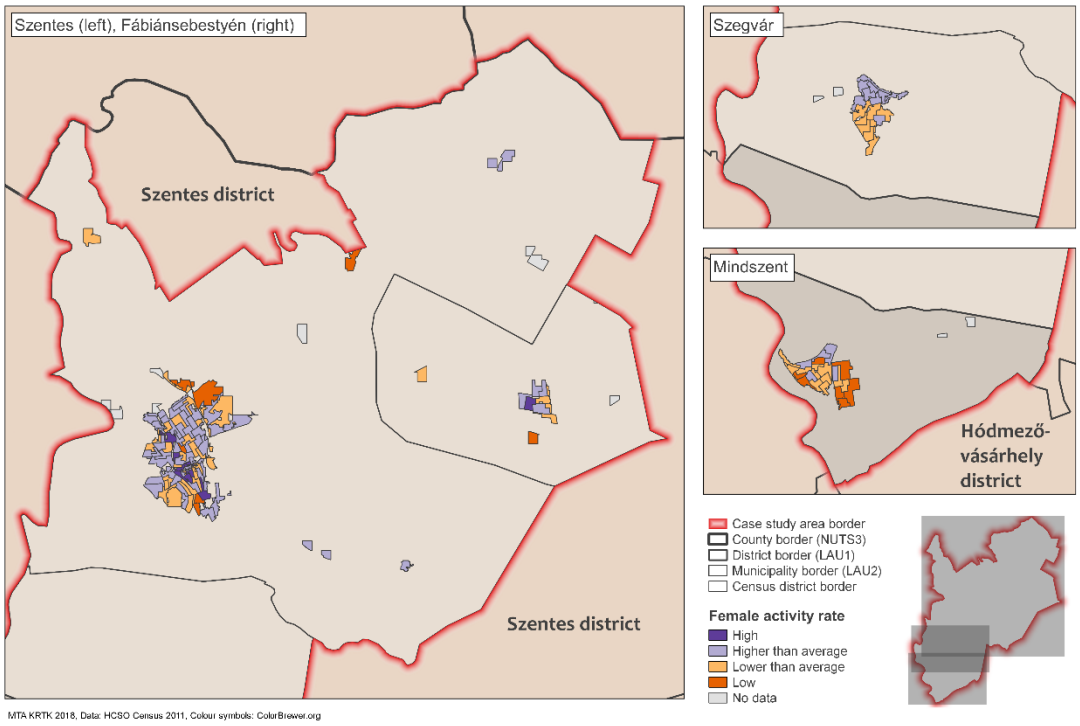
8.3 Map(s) and Photos

1

Female activity rate in Szentes case study area (Szentes TÉSZ), 2011



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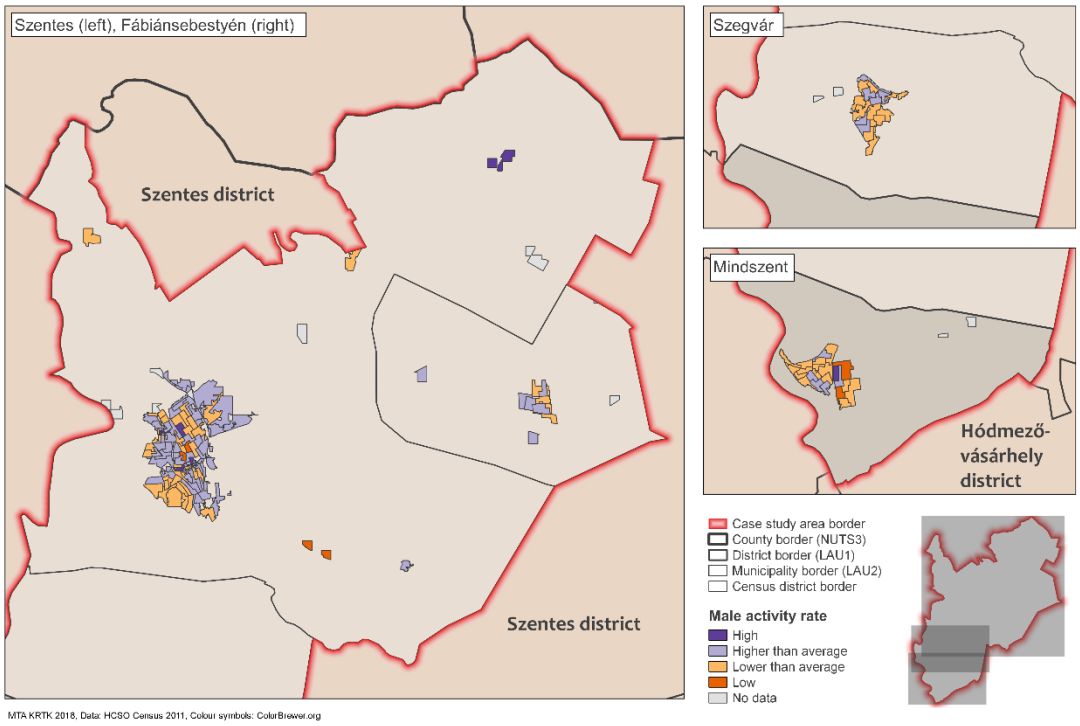
2

Male activity rate in Szentes case study area (Szentes TÉSZ), 2011



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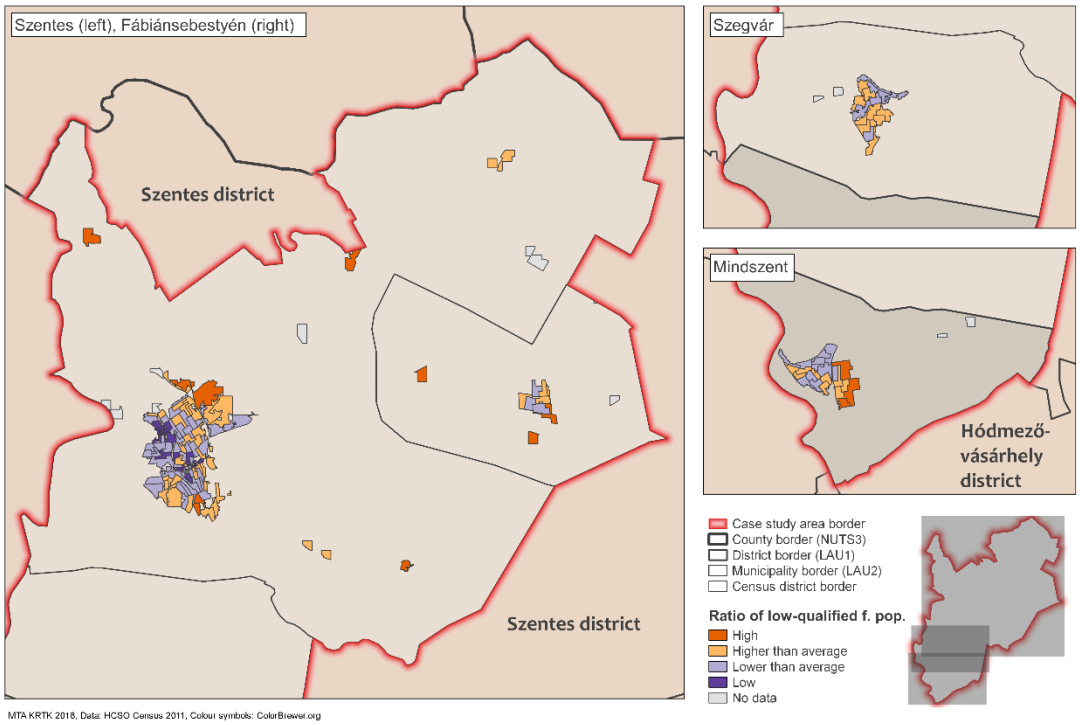
3

Ratio of female population with low qualification (ISCED 0-2) in Szentes case study area (Szentes TÉSZ), 2011



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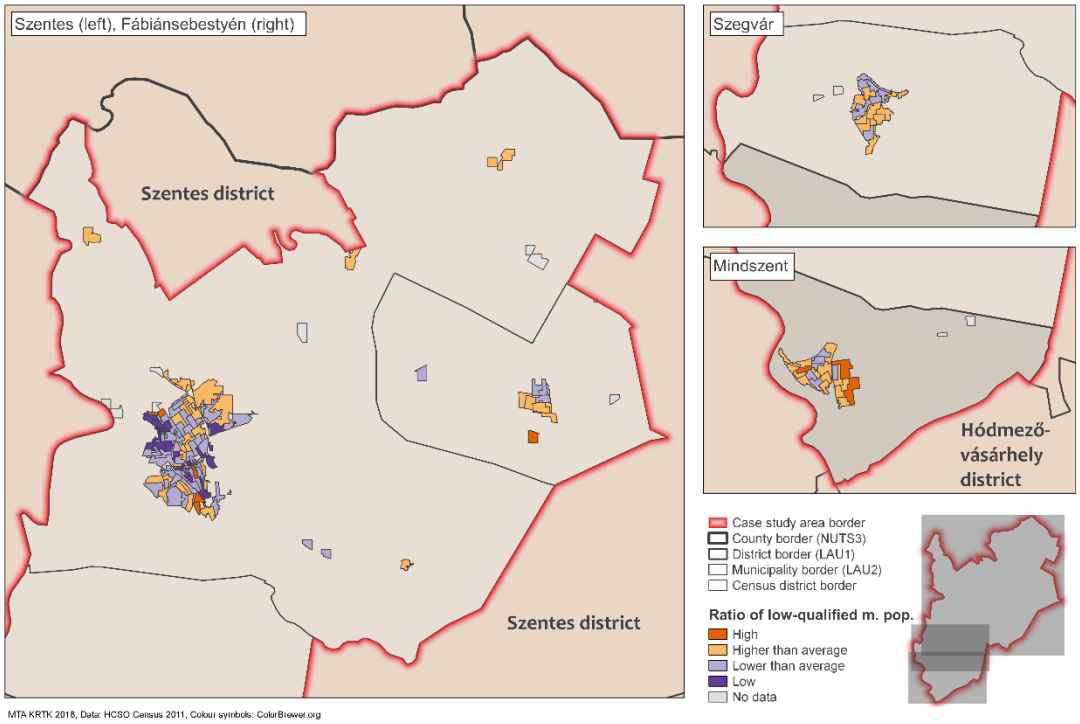
4

Ratio of male population with low qualification (ISCED 0-2) in Szentes case study area (Szentes TÉSZ), 2011



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5

1. 

The largest production site: Szentlászló. The photo was taken by Katalin Kovács August 2019

2. 
Growing without soil in rockwool bricks. The photo was taken by Melinda Mihály, December 2019

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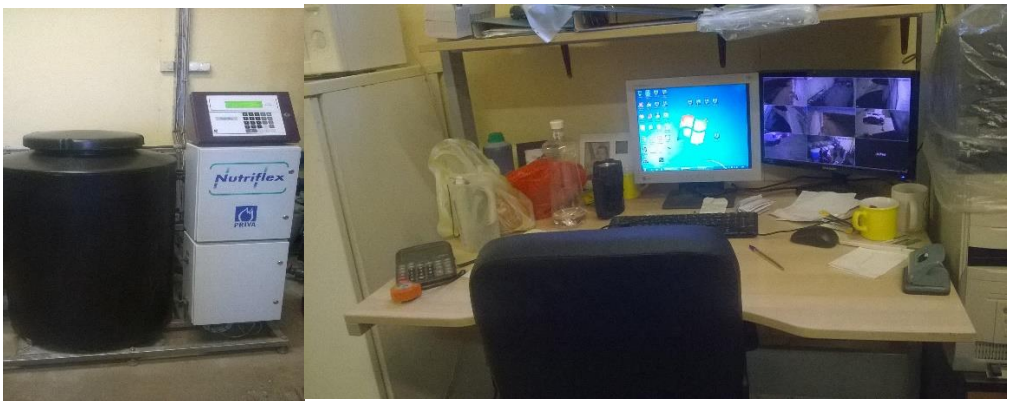
3. 

A “backoffice” to the foil tunnels. Photos were taken by Katalin Kovács August 2019

4. The ‘Szentesi paprika’ brand under a foil tunnel. Photos were taken by Katalin Kovács August 2019

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5. Home-made irrigation and fertigation systems. Photos were taken by Melinda Mihály, December 2018

8.4 Additional information

8.4.1. Info-sheet used at fieldwork

RELOCAL - Resituating the Local in Cohesion and Territorial Development

A „Resituating the Local in Cohesion and Territorial Development" (*A „helyi" szint szere-pe a területi kohézióban és fejlesztésben"*) című projektet az Európai Unió H2020 keret-programja támogatja. A 2016 őszén kezdődő, és 2020-
ban záródó kutatásban 11 európai országból összesen 13 partner vesz részt.
A konzorcium magyarországi tagja a Magyar Tudományos Akadémia Közgazdaság- és Regionális Tudományok Kutatóközpontja.
A kutatás fő kérdése az, hogy a vizsgált országokban az EU által vagy más forrásból finan-szíro-
zott területi alapú fejlesztési projektek mennyiben tudják megvalósítani a térbeli és társadalmi i gazságossággal kapcsolatos szakpolitikai célkitűzéseket.
A kutatás nem csak az elmúlt évek területi alapú fejlesztési beruházásainak a tanulságait fogja el emez-
ni, hanem megpróbál olyan szakpolitikai javaslatokat megfogalmazni, amelyek a jövőben növelh etik a hasonló beavatkozások hatékonyságát.

Kutatási kérdés és motiváció
Az utóbbi években az EU közép- és hosszútávú célkitűzései között egyre hangsúlyosabb szerepet kapott a területi kohézió, és a t erületi egyenlőtlenségek csökkentése. Ugyanakkor a 2008-
as válság során, illetve az ezt követő megszorítások időszakában az EU által finan-
szírozott, területi alapú beruházások ellenére az egyenlőtlenségek a legtöbb esetben nem hogy n em csökkentek, hanem adott esetben nőttek is.
A kutatás legfőbb célja, hogy ezt az ellentmondást minél jobban megértse, és a fejlesztési beavat kozások sikeréhez vagy ku-darcához vezető tényezőket feltárja.

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A kutatás rövid bemutatása

A kutatás két legfontosabb kulcsfogalma a területi igazságosság és a lokalitás, a HELY.
A területi igazságosság vizsgálata során kíváncsiak vagyunk a kiválasztott kutatási terepeken való megnyilvánulására vagy éppen hiányára, arra, hogy a helyi döntéshozók milyen lépéseket tettek illetve tesznek a javak és erőforrások igazságosabb térbeli eloszlásának érdekében.
A lokalitás középpontba helyezése azt a célt szolgálja, hogy a kutatás során végig előtérben maradjanak a helyi igények,
a helyi lehetőségek és a tágabb folyamatokról alkotott helyi perspektívák.
A vizsgált területi egységek léptéke az egyes esettanulmányok esetében eltérő (pl. városnegyed szintű fejlesztések, járási szintű fejlesztések, stb.), illetve ezeknek az egységeknek a határai sem mindig egyértelműen meghatározhatóak, a „helyi" szempontok és értelmezések vizsgálata a projekt eredményességének záloga..
A kutatás egyik célja, hogy az EU elméletben területi igazságosságra törekvő Kohéziós Politikája és a helyi sajátosságok közötti távolságot minél inkább csökkentse. Bár az elképzelhetetlen, hogy a sokféle helyi sajátosságra (fejlesztési igényre, intézményi berendezkedésre, történeti és kulturális sajátosságokra) egységes választ tudna adni a Kohéziós Politika, de
a helyi és uniós folyamatok közötti szakadék csökkentése elengedhetetlen lépés a területi igazságtalanságok mérsékléséhez.

Esettanulmányok és módszertan

A kutatás során a
13 konzorciumi partner összesen 33 esettanulmányban vizsgálja a fenti kérdést –
ebből intézetünk négy magyarországi esettanulmány elkészítéséért felelős. Egy esettanulmány során a kutatók egy adott szűkebb területen zajló fejlesztési beavatkozást (vagy beavatkozások sorozatát) elemeznek, majd következő lépésben adott szempontok szerint ezeket az esettanulmányokat hasonlítjuk egymáshoz.
A kutatás módszertana sok elemből tevődik össze. Részét képezik az esettanulmányok helyszínéit leíró társadalmi, gazdasági és területi statisztikai adatok elemzése;
a fejlesztési projektekre hatással lévő szereplőkkel készülő interjúk kvalitatív elemzése; az esettanulmányok helyszíneit jól ismerő szereplőkkel történő fókuszcsoportos beszélgetés a terület múltjáról, jelenéről, és a lehetséges jövőbeli szcenáriókról. A módszertan fontos része a „helyi" és a nagyobb léptékű (regionális, nemzetállami szintű, uniós léptékű) folyamatok egymásra hatásainak a vizsgálata.

A magyarországi vizsgálati terepek

A négy esettanulmány különböző léptékű területi egységeket és különböző típusú beavatkozásokat vizsgál: a pécsi kutatás az egyik legnagyobb szegregátumban, a Györgytelepen megvalósult telepprogramok hatásait és ellentmondásait tárja fel; az Encsi járásban folyó vizsgálat az immáron negyedik generációs Gyerekesély Program kapcsán próbálja megválaszolni azt a kérdést, hogy beváltja-e a Program a hozzá fűződő társadalmi inklúziós reményeket. Míg eme két esettanulmány a már bekövetkezett, megcsontosodott szegénységből való kilábalás esélyeit kutatja,
a másik kettő a prevenció lehetőségeit vizsgálja („Éltető Balaton-felvidék LEADER, Szentesközpontú TÉSZ.)

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8.4.2. Geothermal energy in the Szentes-Szegvár area and its use in intensive gardening

The utilisation of geothermal energy in the Szentes region is of great significance not only in Hungary but also from an international perspective. The geothermal field that can be found here is the largest in Hungary, and the densest in Europe. The second largest geothermal heating system in Europe, second only to the one in the Icelandic capital of Reykjavik, operates in the area of Szentes. Built over a period of fifty years, this complex system is able to provide thermal energy for homes, public buildings, greenhouses, plastic tunnel plants, livestock farms and grain dryers, and it also supplies thermal water for the local spa and outdoor thermal baths.

The extractable thermal water reaches the surface at a temperature of 85-100 °C from a depth of about 2,000 meters, or 70-80 °C from a few hundred meters smaller depth. The installation of wells happened continuously, but in an undulating manner from the early 1960s, the last one being established a few years ago. For example, the 14 wells belonging to the Árpád Cooperative in the Szentlászló area were drilled between 1964 and 1988, with the highest number equalling half of all the wells drilled between 1978 and 1980. In the 1980s, each of the agricultural cooperatives in Szentes had a thermal well. Of the surrounding settlements three thermal wells in Fábiánsebestyén and six in Szegvár satisfied the demand in heat energy of the local horticultural farms.

Energy has crucial significance to the quantity, quality and economy of forced vegetable production. Nowadays in Hungary, modern technologies capable of delivering marketable production require large-sized, well-ventilated, heated greenhouses or foil tents between December / January and May. In order to supply these with thermal energy, besides geothermal energy several conventional methods for supplying heat can be used such as solid fuel (firewood, wood chips, sawdust, pellets, charcoal) or natural gas (gas tanks), heating oil, or some new methods like heat pumps or energy derived from sun or wind power plants. However, the cost of the production of the required heat energy is significantly lower for geothermal energy than for the other methods.
Nevertheless, in terms of cost of equipment geothermal heating systems are significantly more expensive than any other heating system. The unit investment cost of a production well together with all the other necessary equipment (degassers, buffer tanks, heat exchangers, wires, etc.) amounts to five to six times the cost of investment produced by conventional methods, and 20-30% higher than heat pumps that also require a high level of investment.
Background information: regulations in the EU and Hungary
The most recent legislation directly affecting groundwater is Directive 2000/60 / EC of the European Parliament and of the Council, which requires Member States to:

- preserve and restore groundwater bodies in a good state,
- keep a balance between extraction and supply,
- prevent or limit the entry of pollutants into groundwater,
- designate and register the necessary protection areas in order to reduce pollution and pollutant concentrations.

Thus, the EU rules consider re-injection acceptable only on the condition of the protection of the water bases. This also implies indirectly that sustainability, i.e. the balance between extraction and supply, is proposed to be achieved by adjusting (limiting) the rate and extent of extraction to natural replenishment.
Domestic regulation only partially follows this logic. The Environmental Protection Act (Act LIII of 1995 on Environmental Protection), in line with EU rules, stipulates that in the case of groundwater, water protection means protecting the water supply, taking into account its quantitative and qualitative characteristics, and it also extends the protection to aquifers and their

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covering layers (Section 18 (1)). The Water Management Act (Act LVII of 1995) also emphasizes the preservation of the balance between water abstraction and supply (Section 15 (1)), which is supplemented by a 2003 amendment (Act CXX of 2003, Section 10) which requires the preservation of good water quality, adopting the specific wording of the EU directives.
However, this amendment incorporated into law the obligation to recycle thermal water "extracted exclusively for energy utilization" (Section 15 (3)). At this point, domestic regulation diverges from international practice, since it assumes that the long-term sustainability of water bases can only be assured by prescribing re-injection.
Local stakeholders considered this amendment, together with the modification in the regulation of the concession contained in the Mining Act (Act XLVIII of 1993), which also aimed at ensuring the utilization of thermal water for energy purposes more widely than before by means of a concession tendering procedure, to be a deliberate destruction of the agricultural utilisation of thermal water (Interview_P1). Thus, several people assumed that scheming by competitors was behind the new emphasis on environmental protection and water resource management and the relevant stricter regulations (Interview_L6, P1).
However, the regular examination of the thermal wells in the Szentes region has clearly proved that the enforcement of water resource management principles, for example, can only be achieved by stricter regulations, since the level of resting water calculated at ground level decreased by 25-40 metres in the peak season of extraction in the 1980s. This slowed down in the first half of the 1990s as a consequence of the economic downturn following the regime change. The used thermal water - following the practice of the last half century – is channelled from six wells to the Kurca Main Canal (stream), from five wells to the Kórogy Main Canal, from four to the Talom Canal, and from two to the Nagyvölgy Canal. All of these bring the water to the Tisza via a shorter or longer route, ensuring proper storage time and dilution. The water of the fourteen wellsnext to the Szentlászló unit (with about …. production sites) is channelled into the Veker River, but in fact the water, cooled down and partially purified from the dissolved minerals, reaches here after leaving behind the two artificial thermal ponds created at the outskirts of the town, in the vicinity of Szentlászló unit. Two interconnecting, 40 and 100 hectare cooler lakes, which provide sufficient storage time, ensure that the environmental impact is controlled within the conditions described above. The lakes that were established several decades ago were accepted by the local society, and they do not feel that they pose disproportionate risk to the environment. Moreover, all the respondents mentioned it as a positive example that the smaller lake directly receiving the used thermal water has become an ornithological observation site for 176 species of birds, thus enhancing biodiversity, and at the same time assuming important nature conservation functions by supplying food by its wildlife for the nesting birds that spend the winter here. Local development plans also aimed to exploit the larger water reservoir for fishing, recreational, or sporting purposes, but the idea of the use for fishing was abandoned due to the "thermal taste" of the fish (interview with Demeter), and the other aims were also only partially realized.
Arguments strongly opposed to the obligation of re-injection, in addition to the manageability of environmental risks associated with surface disposal, refer to disproportionately large, almost unfeasible investment costs, and technological problems related to re-injection (interview with Interview_L1, L6_P1_K8).
In view of all the circumstances, in the absence of significant tendering opportunities, it could not be expected that within a few years following the change in the legislation imposing the re-injection obligation there would be substantial progress, especially for larger systems operating multiple thermal wells. Therefore, in the absence of other options, the actors concerned sought to resolve the problem by softening the legal requirements, extending the grace period and helping the investments by seeking tender funds.
Prior to the end of the transitional grace period, the Mayor of Szentes, who was also a parliamentary representative of the district, initiated an amendment to the Water Management Act in order to maintain the operability and preservation of the geothermal energy utilisation system in Szentes. His amendment proposal (Act XCIX of 2009) consisted of only two paragraphs:

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1. The first paragraph of the bill attempted to alleviate the unequivocal stipulation of the obligation of re-injection by delegating the right to allow temporary exemption from the re-feeding of thermal waters to the public authorities. However, as a prerequisite, the applicant was required to have a valid water exploitation license (on 30 September 2009), and the water abstraction rate was not allowed to jeopardize the sustainability of the water base in either quantitative or qualitative terms. That is, the balance between water extraction and supply had to be ensured.
2. The second paragraph provided an opportunity for the water user to reduce the amount of contribution to the water resource fund to the amount of the certified costs incurred in connection with the creation of a re-feeding well (up to a maximum of HUF 300 million).

The latter provision essentially intended to relinquish the contribution payable to the state in favour of the financing of the re-injection well. In the case of companies operating several thermal springs, the amount of the contribution thus transferred could be of considerable help in launching the developments.
As a result of the Szentes lobby's ability to convince both the government and the opposition parties to support it, the bill was finally passed by Parliament. Besides local politicians and Members of Parliament irrespective of party affiliation, the leaders of the more significant local horticultural companies (Árpád Ltd., DélkerTész) active in the nationally renowned economic advocacy organizations also played an important role in the lobbying activities.
According to the government decree adopted on the basis of the amendment (Government Decree 147/2010. (IV. 29.), Section 77 (4)), exemption can be granted from the re-injection obligation, based on individual application, in the case of water bodies with a low or decreasing water supply, until 22 December 2014, and in the case of water bodies with a fair water supply, until 22 December 2020 at the latest.
Since the stakeholders were granted only a few years' extension, the lobbying activity continued. After the change of government in 2010, the local government and opposition MPs acting jointly – often the same persons as before, but now in reversed roles – lobbying closely together with the professional advocacy organisations and local economic leaders achieved that the government extended the temporary exemption period by further three years.
This exemption, however, now only applies to the thermal wells that produce energy linked to agricultural activity. The exemption has been suspended not only for the completed (licensed) wells, but also for those to be installed by 30 June 2015 (Government Decree 1002/2012 (I. 11)).
In accordance with the Government Decree, Parliament first amended the Water Management Act in 2012, and then again in 2013. The second amendment permanently abolished the requirement for obligatory re-injection. Coordinated lobbying has therefore reached its goal. With this, the issue of re-injection has been removed from the agenda, thus the sustainability, quantitative and qualitative protection of deep water bases can be regulated, at most, by issuing water rights permits.
Under these conditions, achieving a balance between extraction and supply can mainly be facilitated by two factors:

- financial interest by raising fines, royalties, fees and sources of funding to facilitate re-feeding;
- technological advancement, which may result in a reduced rate of extraction due to lower energy requirements.

For example, the energy needs of today's state-of-the-art greenhouses are at least 50% lower than ten years ago.

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Research has shown that after the conventional two-step utilisation (before draining or re-feeding), 60-80% of the energy obtained through direct use can be extracted by using a heat pump, i.e. energy efficiency can be increased by more than 50% through substantial investment, but at minimal operational costs. However, the introduction of heat pump systems has so far only appeared in long-term plans, whereas current or short-term development is characterised by the construction of greenhouses, the renovation or modernization of former plants, the development of plastic tunnel cultivation technologies and the modernization of other elements of infrastructure (buffer tanks, degassers, heat exchangers, wires, etc.).
Nowadays the continuous monitoring of technological development is an indispensable condition for efficient, effective management. Sales prices have been almost unchanged for many years, but the costs (raw material prices, costs of technology and employment) are growing steadily and dynamically, therefore efficient production can only be achieved by increasing revenues. The development of production technologies presents constant pressure to invest for producers, in which capital strength, creditworthiness and available tender systems play a key role. It is therefore no coincidence that only one thermal well in the area - the one with the lowest depth – is being run by a family farm.
Greenhouses with state-of-the-art technology are also solely in the hands of big capital joint companies, thus family farms, or small farms employing only a few people, are typically taking part in plastic tunnel farming using secondary water, and / or in unheated plastic tunnel farming. However, the need to increase yields in this horticultural segment also requires the development of technology, which is an almost impossible task without participating in tenders. However, participation in tenders requires long-term commitment, a business plan, sales of sufficient volume and an own contribution. These constraints explain the visible decline in the number of independent small farms, and the rapid growth of the average income and the size of the cultivated area per small farm, i.e. the accumulation and professionalization of production. Parallel with this, the number of people engaged in ancillary activities, the number of pensioners, the frequency of involving family members as “licensed small-scale producers” for tax optimisation is decreasing, which appears formally in the continuous increase in the number of exits. In addition to organizational changes, it is an important consequence of technological development that technological discipline has come to the fore. In the case of the plastic tunnel gardeners of the Szentlászló unit who use secondary water, this is a problem because of the fluctuating quantity and temperature of the thermal water supplied by Árpád Ltd. They are trying to resolve this by the introduction of automatic ventilation, which requires extra investment (Interview_P17, P18).

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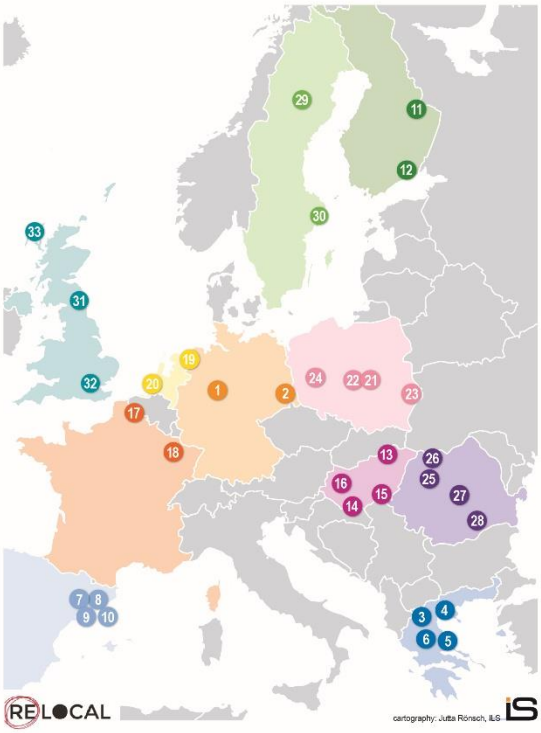
The RELOCAL Project

EU Horizon 2020 research project '**Resituating the local in cohesion and territorial development**' –**RELOCAL** aims to identify factors that condition local accessibility of European policies, local abilities to articulate needs and equality claims and local capacities for exploiting European opportunity structures.

In the past, especially since the economic and financial crisis, the European Social Model has proven to be challenged by the emergence of spatially unjust results. The RELOCAL hypothesis is that **processes of localisation and place-based public policy** can make a positive contribution to spatial justice and democratic empowerment.

The research is based on **33 case studies** in **13 different European** countries that exemplify development challenges in terms of spatial justice. The cases were chosen to allow for a balanced representation of different institutional contexts. Based on case study findings, project partners will draw out the factors that influence the impact of place-based approaches or actions from a comparative perspective. The results are intended to facilitate a greater local orientation of cohesion, territorial development and other EU policies.



	action location	action name	
1	Ostwestfalen-Lippe Region	Smart Country Side	D
2	Görlitz Town	Youth Centre	
3	Western Macedonia Region	Post-Mining Regional Strategy	GR
4	Thessaloniki Region	Alexander Innovation Zone	
5	Volos City	Overcoming Fragmentation	
6	Karditsa Region	Ecosystem of Collaboration	
7	Monistrol de Montserrat Town	Local Strategic Plan	ES
8	Neighbourhood of Premià de Dalt	Llei de Barris	
9	Neighbourhood of St Adrià de Besòs	La Mina Transformation Plan	
10	Eix Riera de Caldes Municipalities	Association of Municipalities	
11	Lieksa Town	Lieksa Development Strategy 2030	FI
12	Kotka Town	Activation of Youth	
13	Encs District	Give Kids a Chance	HU
14	György-telep, Neighbourhood of Pécs	Urban Regeneration	
15	Szentes Town and Szentes District	Production Organisation	
16	Balaton Uplands	Balaton LEADER	
17	Pas-de-Calais Mining Basin	Euralens	FR
18	Lorraine-Luxembourg Border Region	EPA Alzette-Belval	
19	Northeast Groningen Region	Induced Earthquakes	NL
20	Neighbourhood of Rotterdam	Rotterdam South on Course	
21	Łódź City	Participatory Budget for Łódź	PL
22	Brezeziny Town	Social Cooperative	
23	Maslomecz Village	Goth Village	
24	Domachowo, Potarzyce, Stara Krobia Villages	Rural Public Spaces	
25	Neighbourhood of Cluj	Pata Cluj Project	RO
26	Maramures County	Mara-Natur LEADER	
27	Neighbourhood of Codlea	Mălin-Codlea Project	
28	Neighbourhood of Bucharest	Plumbuita PIDU	
29	Västerbotten Region	Digital Västerbotten	SE
30	Stockholm City	Stockholm Commission	
31	Northumberland Uplands	NULAG LEADER	GB
32	Lewisham, Borough of London	Homelessness Project	
33	Isle of Lewis	Strengthening Communities	

The RELOCAL project runs from October 2016 until September 2020.

Read more at https://relocal.eu

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