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## HORIZONTAL INTEGRATION – NEW CHALLENGES AND OPPORTUNITIES FOR FARMERS IN HORTICULTURE SECTOR IN PRESERVING RURAL AREAS

### Summary

In our paper we will focus on human factor in preserving economic sustainability in rural areas. When we talk about revitalization of rural areas, we must take into consideration that agricultural activities could be one factor of these processes. In the rural areas the role of agriculture, especially the role of horticulture is determinant taking its high labour demand into consideration. The vertical connections are motivated between the participants on a food chain by the intention of increasing efficiency, reaching market benefits, reducing uncertainty and risk, and costs of production. From that point of view cooperation among rural habitants could give a chance for them to become real economic partners.

In the paper we examine the process of setting up producers' organizations in Hungary, focusing on those factors that force their cooperation and integration. We emphasize why this process is so slow and why it is necessary to make the cooperation stronger among farmers. We will show how important is the willingness to cooperation of people living in rural areas to work together in order to gain economic personal and social aims at the same time.

**Key words:** Hungary, revitalization of rural areas, cooperation, producer Organizations (POs)

### 1. Introduction

In developing countries the way to conserve, to preserve the environment or to re-establish after human activities seems to be problem. In this paper we deal with the revitalization problem from the point of view of agriculture and villages. Every time it is true that it is more expensive to re-build the environment instead of preserving it. Alternatives must be found for rural settlements on how to be real economic actor in agriculture. Farming systems are major preserver of the rural step like landscape and the main wildlife habitat for many species or

the rural tourism has such role. Many authors deal with the role of farming systems as multifunctionality of agriculture [Sumelius, Bäckman, Sipiläinen, 2004; Wawrzyniak, Sobczyk, 2008; Petrics, Fehér, 2009].

In Hungary the political and economic changes in the early 1990s resulted in a complete transformation of the structure of the agricultural sector and serious changes took place in the urban and rural areas from the point of view of inner migration. Direction of the inner migration is dual: from rural areas to cities and from the urban areas to rural areas. One of the main reasons of this direction is keenness on living from agriculture. In this case these people must be thought how to farm, how to sell the products on the market, how to become strong enough to compete with bigger participants of agriculture. Another aim could be the revitalization of uninhabited settlements with special – marketable – agricultural activity. For this there is a good Hungarian example of a small village called Gyűrűfű, where the newly settled people deal with organic farming [Brown, Schafft, 2002; Komoch, 2000]. For this a comparable example could be the Sunflower village in Poland. [Sunflower Farm Eco, 2009] The earlier co-operatives and state farms were reorganized, and the resulting vacuum gave rise to a large number of privately-owned farms. As a consequence, the sector is characterised by structural problems, lack of sufficient capital and low efficiency. The co-operation could be the solution for these privately-owned farms [Baranyai, Takács 2007]. The collaboration among farmers cannot be realized independently from the full system of food product chain. Inside the food product chain numerous stock producers, processors and trader companies operate. The competitive and efficient fulfillment of demands of consumers as well as the secure sale of products of farmers is not possible without the co-ordination of the participants of the food product chain [Ernyei, Takácsné 2003].

Agriculture in transition countries is characterized by considerable uncertainty. In these countries the absence of enforceable contracts makes it difficult to set up any kind of vertical co-ordination. In addition, it creates severe barriers for price discovery, involving high transaction costs to co-ordinate market exchanges. In those sub-sectors where a production contract does exist, agricultural producers face hold-up problems (e.g. delayed payment for delivered products or ex post price reduction by retailers). These phenomena are reinforced by the emergence of a modern retailing sector leading to serious problems for sub-sector dominated by fragmented and small-scale farms, as in case of the horticultural sector [Bakucs, Fertő, Szabó, 2008].

In the regulation of the vegetable-fruit market of the European Union, the fresh vegetables, fruits and the raw materials of processing industry belong to the less regulated products. Market regulation determines only strict quality requirements which means that primarily the market competition should be fought on the unified market of the EU [Erdész, 2008; Juhász et al., 2008; Takács-György, Horváth, Takács, 2008]. The key element of market regulation is the implementation of viable Producer Organizations (POs). There were more than 1400 POs in 2004 in the EU, which coordinated about 34% of the fruit and vegetable production. The European Committee intends to increase this proportion

to 60% by 2013, therefore it approved the reformed market regulation decree concerning the section from January 1, 2008 [Dudás, 2007].

In the recent years in Hungary, the vegetable and fruit sales have shifted towards chain stores. In the average of 2002–2004, 20,9% of marketable fresh vegetable and fruit was sold on consumer markets. 36,1% of products went to the consumers through traditional small shops and catering establishments. In the final phase, the presence of trade chains is the strongest; they distributed 43% of the produced and marketed products. The proportion of trade channels and the directions of trade have not changed significantly since 2002–2004. In spite of the fact that the retail chains have become unavoidable factors in the Hungarian food trade, the role of specialized shops and consumer markets is still significant in fruit and vegetable sales. The direct supplies from producers are not typical in traditional trade, the role of wholesale dealers and wholesale markets is still determinant. The modern retail trading has already aimed to cut off middlemen and strengthen the long-term contractual relationships [Popp et al., 2008].

In the paper we examine the process of establishing producers' organizations in Hungary; we show their regional role focusing on those factors that force the cooperation and integration in horticulture. We emphasize why this process is so slow and why it is necessary to enforce the cooperation between Hungarian fruit and vegetable farmers.

## 2. Material and methods

While introducing the development process of the Producer Organizations in Hungary, we followed the changes in the number and typical indices of POs (number of members, size of land, income) from 1999 to 2007. We examined the role of legal regulations concerning the Hungarian POs and the effect of legal background on the foundation and operation of a Producer Organization. The turnover of the preliminary and permanently approved POs was analyzed on the basis of income statement data from the Companies Registry.

The factors hampering the increase of number and role of POs were explored on the basis of references. The main motivating factors of trading through POs were introduced by the data of questionnaire surveys (ZÖLD-TERMÉK Cooperative, MÓRAKERT Cooperative).

We examined the reasons for joining the cooperative with the help of nine questions. First, answers were evaluated with descriptive statistics, and then we explored the latent structures behind the reasons given by the members. Following the factor analysis only seven out of the nine elements were used in the final model, which were grouped into two factors. Based on the factor scores we received in the factor analysis we carried out the cluster analysis in two steps. First, I finalized the possible number of clusters (there were four) by means of hierarchical cluster analysis, then we employed the method of K-Means on them.

We aimed to explore the activity level of cooperative members by examining how often they used the different services available at the cooperative (production organisation, procurement of input materials, production technology counselling, taxation and audit counselling, waste management). I assigned a number to each answer: yes, regularly (4), yes, occasionally (3), no, but intend to (2), no, and do not intend to (1). The question refers to five types of services so the answers outline the activity level of the producers. Higher scores refer to a higher activity level. In the correlation analysis of members' highest educational levels we assigned a number (on a 7-item scale) to each educational level: less than eight classes finished in primary school (1), primary school (2), vocational school (3), secondary school (4), grammar school (5), college (6), university (7). The correlations between cooperative members' activity and demographic and production features were examined with Pearson's Correlation.

### 3. Results

#### The process of forming Producer Organizations (POs) in Hungary

The first Producer Organization in Hungary was approved by the Ministry of Agriculture and Rural Development (FVM) in 1999. The Ministry, besides other regulations, fixed the minimum number of members in 15 and the expected annual revenues from the sales of vegetable and fruits produced by the members in at least 150 million HUF. Minimum 8 members and 60 million HUF annual income was required for the preliminary approval. The process of setting up the cooperation's was very slow; by the end of 2001 there were only 11 approved organizations. During this period the farmers were very reluctant to cooperate and work together. **Many of them were afraid that the Producing Cooperatives of the socialist era would be restored** and the minor state involvement did not help to encourage the cooperation either.

Although the Hungarian regulations enabled the support of setting up and operation of the POs, there were no financial funds allocated for this purpose in the first years. Another problem was that the statutes of the POs did not correspond with the requirements of the Law on Cooperatives, while the statutes made according to the Law on Cooperatives did not harmonize with PO regulations. Thus the Law on Cooperatives should also be modified in order to register the PO as a cooperative in the Company Registry. Further problem was the misinterpretation of the basic regulation No. 2200/96 of the EU. Due to the wrong interpretation of „one member – one vote” principle, the Ministry of Agricultural and Rural Development first did not approve the establishment of POs in the form of business corporations.

**The POs received actual subsidies first in 2002**, the result of which was that the willingness to set up POs accelerated and 24 organizations were officially approved by the end of the year. **The real breakthrough was, however, in 2003**, by the end of which there were 68 POs in Hungary. In 2003, the Ministry of

Agriculture gave priority to support the foundation of POs (and gave significant financial subsidies to set up POs in the spirit of preparing for EU integration.

**The number of POs increased by the end of 2004.** At that time the number of preliminary and permanently approved POs was almost 100 [Dudás, 2007]. In 2004 it became obvious within professional circles that this pace of growth could not be maintained because some of the organizations were not able to meet the legal and market requirements even in the short term. Following their formation, many POs faced new challenges. In the year 2004, a lot of POs could not reach the 125 million HUF vegetable and fruit sales income which was necessary for the qualification of preliminary approved PO. Thus the POs with this problem had to find other POs and either integrating or incorporating in them the legal successor PO could fulfill the minimum sales income required for preliminary approved PO qualification and was supposed to meet the minimum 250 million HUF fruit and vegetables sales income by the end of the preliminary approval period and receive the permanent approval.

Thanks to the previous subsidies, **most of the organizations participating in PO movement between 2003 and 2005 got the chance to operate.** Even those organizations received approval which did not have the appropriate conditions for operating as a PO in the long run. Those organizations which could not sustain independently were forced to join another, independently sustainable PO. As a result, the **concentration trends started in 2005.** The EU integration had great impact on the stimulation of integrations and amalgamations. The customs duties were eliminated, thus a great amount of imported goods appeared on the home market. The POs had to fight to keep their markets at home and had to build new connections with foreign partners. Some of the POs failed at this. By the end of 2005, the number of POs reduced to 71 due to the integrations, amalgamations and recall of PO qualifications.

The concentration trend went on: by late 2006 there were 63 POs (9 permanently approved and 54 preliminary approved), while **by the end of 2007 there were only 58 POs** (11 permanently approved and 47 preliminary approved) **in Hungary.** Figure 1 demonstrates the changes of numbers in PO movement in Hungary.

The joint turnover of preliminary and permanently approved POs was the highest in 2006, with 38 billion HUF, and it reached 33 billion HUF even in 2007 when frost damages were very severe. The proportion of total turnover within the section's trade permanently increased until 2005, then it slightly decreased and it was 18.5% in 2007. The turnover of members of POs was above 30 billion HUF in 2006 and almost the same amount in 2007. The proportion of sales by members compared to sales in the section did not change significantly between 2004 and 2007; it stagnated around 15–16%. The number of producers coordinated by POs was almost 24 thousand in 2004 and 20,2 thousand in 2007. The vegetable and fruit producing land managed by the POs increased from 25.6 thousand hectares in 2004 to 35 thousand hectares by 2007 (Table 1). Out of these 35 thousand hectares, the fruit farms covered 22 thousand hectares while vegetables were produced on about 13 thousand hectares.

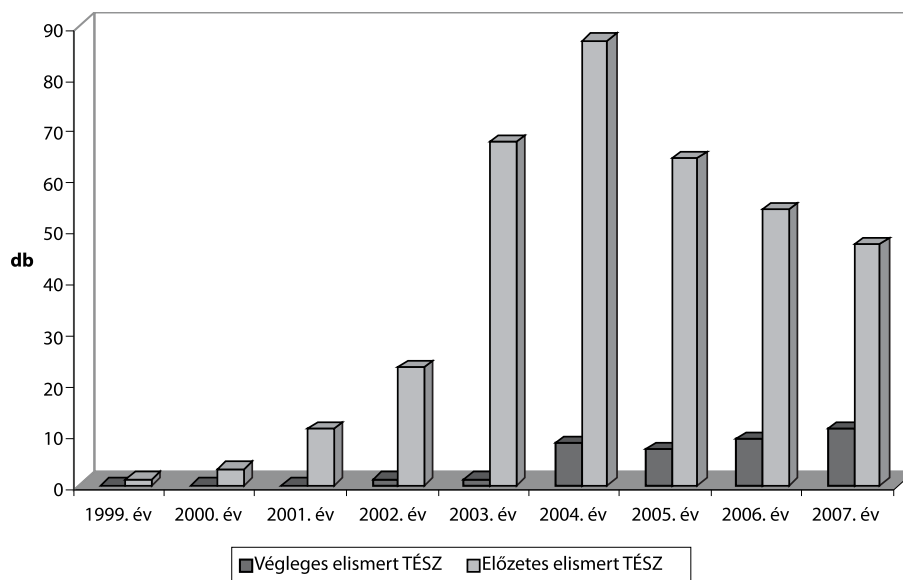


Figure 1. Number of POs in Hungary from 1999 to 2007

Source: Own construction on the basis of data from the Ministry of Agriculture and Rural Development.

Table 1

Main features of (preliminary and permanently approved) POs between 1999 and 2007

Title	Q.u.	1999	2000	2001	2002	2003	2004	2005	2006	2007
Number of POs*	pcs	1	3	11	24	68	95	71	63	58
Vegetable and fruit producing areas covered by POs	ha	268	1 145	3 320	9 825	25 139	25 640	26 122	29 550	34 982
Number of members of POs	head	54	362	1 165	4 120	13 450	23 980	20 514	20 494	20 177
Total turnover of POs**	Billion HUF	0,26	0,88	2,09	6,31	22,10	33,96	32,88	37,98	33,03
Turnover by members of POs	Billion HUF	0,21	0,70	1,62	5,43	20,31	26,24	23,52	30,01	29,49
Total turnover of POs/ turnover in section	%	0,17	0,62	1,36	4,51	14,18	20,58	21,95	19,13	18,47
Member turnover of POs/ section sales	%	0,14	0,49	1,05	3,88	13,03	15,91	15,70	15,12	16,49

\* Number of approved POs on 31st December of the given year.

\*\* Total vegetable and fruit sales of Pos.

Source: Own construction on the basis of data from the Ministry of Agriculture and Rural Development and the data of the National Strategy [2008].

On the basis of the income statement data of annual accounting reports by Companies Registry, **the net income from sales of the 11 permanently approved POs and 47 preliminary approved POs (status on January 1, 2008) was above 43 billion HUF in 2007.** The sales income of the same 58 organizations was 41,5 billion HUF in 2006.

The net sales income of 11 POs – which had permanent approval on January 1, 2008 – was above 22 billion HUF in 2007. MÓRAKERT Cooperative had the highest turnover with 5,1 billion HUF, which is still well behind its net income of 8,2 billion HUF in 2006. Similarly to 2006, the Cooperative of Délalföldi Kertészek (Horticulturists of the Southern Great Plain) had the second largest net price income with 4,6 billion HUF, which is higher by 3% than in the previous year. The third largest turnover was 2,1 billion HUF by Dombegyházi EURO PO. Two other POs achieved 1.5 and 1.8 billion HUF and the income of further 5 organizations was above the 1 billion HUF limit. Out of the permanently approved POs, only one (HAVITA PO) performed below 1 billion HUF, it has 514 million HUF income.

The net sales revenue of 47 POs which had preliminary approval on January 1, 2008 was almost 21 billion HUF in 2007. Out of them, unfortunately, only 3 POs (RÓNA PO, Józsai PO, GRAND COOP PO) could go above 1 billion HUF. The income of seven POs was between 730 and 910 million HUF, while further two surpassed 500 million HUF. 10 organizations performed between 400 and 500 million HUF, 11 organizations between 250 and 400 million HUF. The net sales revenue of 14 preliminary approved POs did not reach 250 million HUF. That shows a relatively bad situation concerning the minimum income threshold.

**Almost all the POs operated in the form of cooperatives (49),** only 9 organizations chose the form of limited liability company. Most of the POs are in the two regions of the Great Plain (Figure 2).

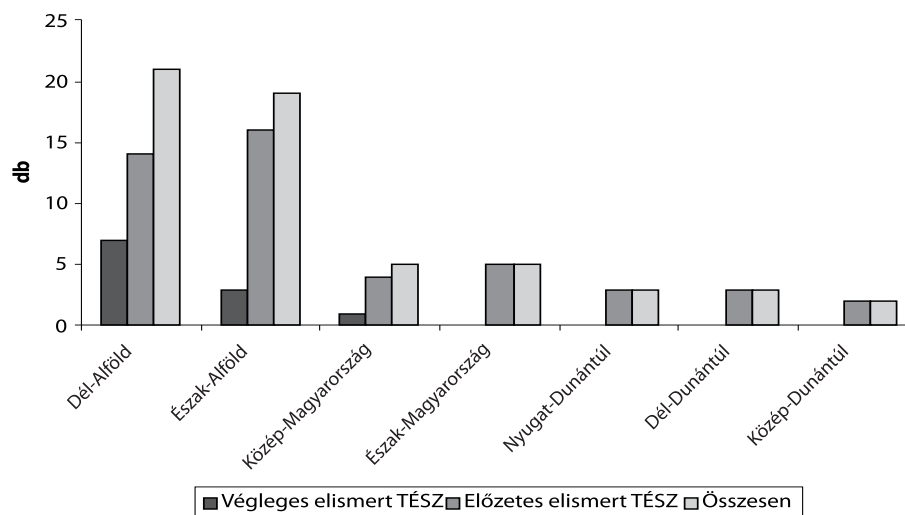


Figure 2. Regional location of POs on January 1, 2008

Source: Own construction on the basis of data from the Ministry of Agriculture and Rural Development

### Producer Organizations in spring 2009

Significant changes could be seen as the effect of EU reforms because the period of preliminary approval terminated for most of the temporary POs on April 30, 2009. These preliminary approved organizations have to fulfill the conditions of final approval by the above deadline. If they fail, they have to join one of the finally approved organizations. On the basis of income statements of 2007, 14 organizations performed below the 250 million HUF income limit.

Until May 1, 2009, 22 POs out of the 47 – which had preliminary approval on January 1, 2008, obtained the final approval, thus **on May 1, 2009, there were 33 permanently approved POs registered by the Ministry of Agriculture and Rural Development**. Two organizations (TÉSZ-ÉSZ Non-Profit Ltd and DALZA Ltd) were recognized as **secondary OP co-operations**. The concentration process has begun.

### Factors hampering the extension of Producer Organizations

**The strengthening of POs is significantly hampered by the black trade on the wholesale markets.** Although the global significance of wholesale markets is decreasing, they still have important role in regional distribution of goods and information [Erdész, Kozák, 2009]. The Wholesale Market of Budapest in itself has approximately 30–35% share in fresh vegetable and fruit trade. On the wholesale market deals are often done without any invoices and goods are distributed without the examination of origin or quality. There are no actions against murky trade; therefore the illegal dealers can work free [Popp et al., 2008]. **The POs should compete by observing the regulations** (taxation, accounting, quality, food safety, labor regulations, etc.) which means serious competitive disadvantage for them. Unfortunately, often the PO-member farmers choose „free trade” offered by wholesale markets, too, in the hope of gaining quicker profit.

The main trading partners of POs are the hypermarkets and chain stores. The cooperation, however, goes with a lot of difficulties: the hypermarkets – using their dominance – fix long terms of payment and request low prices. The POs do not inform against them by fearing the expulsion. The chain stores request refunds from suppliers under different titles. In 2008 these refunds amounted from 0 to 19% in Hungary [Popp et al., 2008]. The **financial refund system** usually includes slotting allowance (shelf-price), different marketing contributions and the compulsory campaign sales. Due to the long terms of payment, the POs have serious difficulties in **financing the current assets**.

The casual work (seasonal work) always means great problems for horticultural farms, including POs. The casual worker card did not fulfill hopes because it was not appropriate for legalizing the seasonal agricultural work owing to the time limit of casual employment [Popp et al., 2008]. The high manual labor need in horticulture, and the work peaks of post-harvest activities in POs require casual employment.

In spite of the reforms of vegetable-fruit section of the European Union, the **administration burden of producer organization has not been reduced, much**



**rather increased.** The permanent changes of legal regulations determining the framework of operation hamper the planning of PO management. The unjustified over-complication and administration of PO business programs obstructs feasibility. The activities which can be financed by the operation programs are often not clear which often makes the realization of rational tasks impossible. Complicated, easily misinterpretable index system is used for measuring the efficiency of the producer organization. Although, theoretically, the vegetable-fruit section belongs to the less regulated sections, the producer organizations coordinating the farmers are pretty much over-regulated.

The reasons for joining the cooperative

**The principal motivation for joining the cooperative was secure marketing,** as it is indicated by the highest average score as well (5,67). **The second most important motivation was the reduction of production risks** with 4,63 points; **in the third place there is the need for common procurement of input materials** with 4,56 points. Production coordination in accordance with market demand (4,38 points) and the need of belonging to a community (4,30 points) were motivations with strong mediocre importance. Access to production technology counselling was less than a mediocre motivation at the time of the admission (3,87 points). **Surprisingly, the predictability of market prices** was only the seventh motivating factor. Application of environmentally friendly production technologies came right before the need for taxation and audit counselling, scoring 3,58 and 3,48 points respectively (Table 2).

The independent two factors T-test (with 95% reliability) indicated a significant difference between the average scores of founding and non-founding members, with regard to taxation and audit counselling and application of environmentally friendly production technologies. In both cases founding members better appreciated the factors listed above.

Table 2

Reasons for joining the cooperative, for all members

Ranking	Reasons	Average	Disper- sion	Relative dispersion	Number of elements
1	Secure marketing	5.67	1.45	0.26	55
2	Reduction of production risks	4.63	1.83	0.39	52
3	Common procurement of input materials	4.56	1.86	0.41	52
4	Production coordination in accordance with market demand	4.38	2.02	0.46	53
5	Need of belonging to a community	4.30	2.04	0.48	53
6	Production technology counselling	3.87	1.93	0.50	53
7	Predictability of prices	3.77	1.88	0.50	53
8	Application of environmentally friendly production technologies	3.58	1.92	0.54	52
9	Taxation and audit counselling	3.48	2.09	0.60	52

Source: own survey.

### Reasons for trading through POs

One research made at ZÖLD-TERMÉK Cooperative and MÓRAKERT Cooperative (2 POs in Csongrád county 2007 and 2009) has revealed that the PO can stimulate its members to use the organization for trade by taking the appropriate quantity of goods, flexibility in supplying, reliability and positive personal relations. The flexible and quick payment conditions and the valid contracts are also motivating factors for the members. Less important motivating factors are the price, the extension service offered by the PO and other services [Dudás, 2009].

The management of the PO can improve the cohesion within the cooperative by increasing the reliability of the organization and the strengthening of personal relations (between members, between members and management). Thus the members are more content and eager to stay within the cooperative [Dudás, Fertő, 2009].

## 4. Conclusions

In spite of the reforms of vegetable-fruit section of the European Union – which took effect on January 1, 2008 – the administration burden of producer organization has not been reduced, much rather increased. The permanent changes of legal regulations determining the framework of operation hamper the planning of PO management. In spite of the fact that, theoretically, the vegetable-fruit section belongs to the less regulated sections, **the producer organizations coordinating the farmers are pretty much over-regulated.**

By 2009, there will be a group of POs in Hungary which are able to meet the stricter conditions of approval. Then it will be possible to **set up relations between these POs on geographical or product basis which can lead to higher-level secondary co-operations.** Utilizing the experiences of earlier trials it seems absolutely necessary to strengthen the secondary organizations or to create new ones with clean sheets.

The PO can stimulate its members **to use the organization for trade** by taking the appropriate quantity of goods, by showing flexibility in supplying, reliability and positive personal relations. The flexible and quick payment conditions and the valid contracts are also motivating factors for the members.

As agricultural activity is/could be one of the effects of keeping habitants in the rural area, human willingness to cooperate, to work together and to become stronger economic actors as a result is an important element of revitalization of rural areas from social aspects. It is clear that the maintenance of liveability of rural areas must be taken into consideration complexly and it is a first question how to keep rural people in smaller villages giving them chance for earning activities [Wawrzyniak, Sobczyk, 2008]. For this the long time analyses of living standard, the quality of life of habitants and the changes of its economic indexes together with the habitants' willingness to live in rural areas are very important [Király, Takács, 2008].

20 years after the socio-economic transition it must be stated that the new co-operating forms has been established in fruit and vegetable sector in Hungary, but their role is not so high than in those former European Union countries where this sector has traditional important role. They have important role to keep and strengthen agricultural production in those areas from where the emigration of people could be high if they had not get market abilities of their products. If people remain in villages and can get income, they will preserve their environment, biodiversity; revitalization process of rural areas will be easier. From this aspect such cooperation organized from beneath in smaller settlements make them stronger, reinforced the viability of rural areas that could give positive effect on urban areas, too. This dualistic strong relation becomes more important when the physical distance is not too much between cities and villages. Rural areas can take part in revitalization of cities by performing a recreational, commercial and service function while cities by building up the educational, health and cultural background and in many cases by creating infrastructure background.

[Staszewska, 2009] Both actors can get benefits from the synergy in the revitalization process.

The PO can be an alternative only for those farmers who are individually able to produce quality products. The most important task of a PO is to ensure the safety of trading and to support its members with services.

It is necessary to strengthen the cooperation willingness among producers, define what does the trust among members (cognitive and affective) look like and whether it has greater impact on group cohesion than trust (cognitive and affective) between members and management, what do POs members' performance and satisfaction look like and whether it can be increased by better marketing, organizational and financial work of POs, by more responsible behavior of management and by better communication. If they are successful, they could be one element of the complex revitalization process of rural areas, increasing the living standards and making people stay in the revitalized areas.

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