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PHD SCHOOL OF MANAGEMENT AND BUSINESS ADMINISTRATION
GÖDÖLLŐ

Research of Producers' Cooperation in the Fruit- Vegetable Sector

PhD Thesis

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Gödöllő
2013

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CONTENTS

1.	INTRODUCTION.....	4
1.1.	Relevance	4
1.2.	Background and Objectives.....	5
2.	INTRODUCTION AND METHODOLOGY	7
2.1.	Research hypotheses	7
2.2.	Data Sources	7
2.3.	Evaluation Methodologies of Research Results	9
3.	RESULTS.....	10
3.1.	Results of the Literature Review	10
3.2.	Results of the Secondary Research.....	10
3.3.	Justification of Hypotheses.....	21
3.4.	New and Original Scholarly Achievements	23
4.	CONCLUSION AND SUGGESTIONS	25
5.	SUMMARY	26
	PUBLICATIONS IN THE AREA OF THE PHD RESEARCH	28

1. Introduction

1.1. Relevance

Due to the changes after the change of regime an asymmetric market structure developed in the fruit and vegetable sector that deteriorated the bargaining power of producers both in the domestic and international markets. Those concerned – mainly because of external motivation – started to realise that they can accommodate the new situation if they follow the international schemes and harmonise their activities. Finding the organisational framework for cooperation was difficult at the beginning and the current settings may not be appropriate either. The historical predecessors may not make those organisational solutions that are successfully applied by producers in other countries in similar situations attractive for all. From the middle '90s as part of the preparation for the European Union membership formation of producers' marketing co-operatives was started and it helped to find the solution. Namely, the European Union subsidizes formation of producers' cooperation and contributes to financing their operation so that the producers are able to achieve better bargaining positions in their markets especially where the power relations are asymmetric. These successful producers' cooperatives served as examples for the Hungarian organisations as well, because it was believed that they would be as successful as their western predecessors. In the western European countries the PMCs were formally co-operatives but other business organisations were also allowed. Whatever the business organisation is the democratic operation must be guaranteed. The secret of success of the cooperatives in the European Union is their ability to accommodate the changing markets and agricultural policy environment and the applied marketing, financing and organisational strategies. (Szabó G. 2007).

The producers' cooperatives in the European Union member countries have dominant role in growing, primary processing and marketing of fruit and vegetables. Having seen the successful predecessors, the Hungarian producers were looking forward to joining the Union since they expected financial subsidies as well as new markets that would increase their income. That is why the 25/1999. (III. 5.) FVM decree that was harmonised with the common law and enabled formation of fruit and vegetable Producers' Market Co-operatives was welcomed. The aim was to set up such flexible cooperatives like the Western European ones. Improvement of vitality and competitiveness of the organisations were to be achieved so that they can create greater economic power. (Horváth 2013).

Pursuant to the authorization granted in the act on the development of agriculture the 25/1999. (III. 5.) FVM decree orders about the fruit and vegetable Producers' Marketing Cooperatives, the PMCs in short. The PMCs of permanent and temporary recognition operate according to the

programmes in the *National Strategies for Sustainable Operational Programmes in the Fruit and Vegetable Sector of 2008* (hereinafter referred to as National Strategy) that is based on and harmonised with the Commission Implementing Regulation 543/2011/EU. The producers' cooperatives set up their own programmes to achieve the aims and objectives of the National Strategy. These documents are operative activity plans that take into account the organisation's capabilities and specify the tasks to be performed by the PMC concerned. During the planning the organisation has to select the actions it wants to undertake in order to achieve each aim. The strategic goals, objectives and actions form a solid logical system that serves the execution of the overall objectives as well as the members' interest. To execute the strategy the organisations that possess an approved programme are eligible for financial resources and subsidies. The organisations write yearly reports about the execution of their programmes and the financial aspects of their activities which have monitoring, information gathering and feedback functions as well.

The European Union created a common system for assisting the marketing of the fruit and vegetable producers that provides a common organisational framework for Producers' Marketing Co-operatives in each member state. It can be stated that from agricultural policy point of view PMCs are priority organisations that play an important role in the product line coordination within the market regulation of the European Union. Experiences of the nearly one decade that has passed since joining the EU raise the question whether the regulations are flexible enough to apply the model in all member countries with acceptable efficiency. In spite of the common market regulations individual countries may have differences that make the application of the same model successful or unsuccessful. The relevance of my research lies in the fact that although there is a need for producers' cooperatives their propagation and development in Hungary have not met the expectations, the factors that hinder their operation and development must be revealed. Besides identifying the problems I would like to answer the question of what methods are needed to make the operation of these organisations better and to increase the efficiency of subsidies and hence strengthen and amend their role in the sector. This is a topical issue because the results can be used in the following, 2015-2020 planning cycle, so that the organisations can work better in favour of their members.

1.2. Background and Objectives

As a horticultural engineer economic analysis of the horticulture sector was part of my research work before the change of regime as well. As a business economist specialist I dealt with cooperation and competition among companies. Later, in my thesis for the Marketing Economist Degree at Corvinus University I examined how the corporate marketing tools may be used in agriculture and especially by Producers' Marketing Cooperatives. These studies provided the main

motivation for my PhD topic selection. I took part in several researches in this area during my PhD studies, too.

This study is about the operation of certified Producers' Marketing Cooperatives that have accredited operative programmes. The aim is to examine the efficiency of the European model in Hungarian context and to reveal the factors that support and that hinder its operation. Additionally I want to identify the opportunities for a more successful operation of Producers' Marketing Cooperatives.

Prior to the current research I was dealing with the market changes of and the effects of these changes on the vegetable-fruit sector for a long time. I have unfolded those opportunities that help the players of the sector to accommodate the macro- and microeconomic changes flexibly. In a secondary research I revealed the importance of social capital in cooperation and I dealt with the relationships among social capital, trust and economic performance. Besides analysing the external environment I tried to develop an assessment tool that helps to measure the status of the internal factors of cooperation. This tool is appropriate for tracing the changes in the quantity and quality of resources and competencies put at the cooperative's disposal by members so that the development of network can be categorised.

I have reviewed the literature and made a secondary research on the theory and practice of cooperation and competition as well as corporate marketing, and I also examined the application, advantages and disadvantages of these in the area of my research. Since one of the most important tasks of PMCs is supporting the marketing of production cooperatives I examined the marketing activities of producers' marketing cooperatives in a primary research as part of my secondary research. Namely, the special and complex approach of marketing may contribute to success; therefore, I aimed at revealing the areas of development in the PMCs' marketing activities that are necessary for a long-term, stable and profitable operation of members.

In 2012 I was a leading expert in the evaluative research of executing "*The National Strategies for Sustainable Development in the Vegetable and Fruit Sector*" ordered by the Ministry of Rural Development that helped to confirm, improve and refine my results as well as make the final conclusions. The aim of the research was to evaluate the efficiency and effectiveness of the strategic framework that defined the operation of Producers' Marketing Cooperatives formed by fruit and vegetable producers and possessing a final operative programme between 2007 and 2011.

Results of the above research are used in the chapters on my secondary and primary research.

2. Introduction and Methodology

2.1. Research hypotheses

Based on the relevance and the objectives of the research the research hypotheses are the following:

- **H-01.** The macro- and microenvironmental changes of the change of regime have significantly reshaped the operation of the fruit and vegetable sector in Hungary.
- **H-02.** The cooperation of producers may improve their bargaining power against traders and the processing industry with concentration of supply and harmonised marketing activities. PMCs supported by the European Union provide appropriate operational framework for this because they concentrate the supply of fruit and vegetable producers hence improve their bargaining power in the market.
- **H-03.** Out of the resources at the sector's disposal the scarcest is the social capital that hinders successful cooperation.
- **H-04** There is a conflict of interest between farmers of smaller or larger lands that disturbs the operation of PMCs. These conflicts strain the operations from inside and may lead to a mass withdrawal.
- **H-05** Bureaucratic constraints of the operation of PMCs may keep some producers away from the co-operations because the black market offers advantages over complying with the regulations in the short run.
- **H-06** Successful operation of PMCs is influenced by external environmental factors and internal factors to the same extent. A co-operation will be successful if the essential resources and network competencies are available.
- **H-07** If markets are scattered and are in shortage of capital there is a need for inter-company (meso) marketing. There is often a lack of well trained and widely experienced marketing experts for this work.

2.2. Data Sources

The aim of the secondary research was to examine the macro- and microenvironment in order to identify the external factors that influence the operation of the fruit-vegetable sector and the PMCs in this sector. Having reviewed the relevant literature I made a statistical analysis of the data produced by the Hungarian Central Statistical Office about the fruit-vegetable sector and I also used

data provided by the FruitVeB Hungarian Interprofessional Organisation for Fruit and Vegetable Marketing Board and the Research Institute of Agricultural Economics. I used both the Hungarian and the EU laws for my work. I employed descriptive statistical methods during my research and supported my conclusions with my own calculations. I examined the following topics:

- Analysis of land relations in the fruit-vegetable sector and their effect on the carrying capacity of the sector.
- Analysis of the markets of the sector. I made calculations from the data available to define the level of concentration of the market for estimating the bargaining power of the sector.
- Analysis of export-import, retail and wholesale trade, and industrial processing. I reviewed the factors influencing customer and consumer behaviour and I examined recent changes in this area.

The aim of the primary research was to examine the operation of the recognised vegetable-fruit PMCs in order to receive information on their results and problems. Since there are only a few recognised PMCs it was a census research. The question was the extent of successful implementation of the model of the successful producers' marketing co-operatives in the European Union. In the experiment both the strategic and operative management were examined therefore different research methods were used:

- Interview of presidents and executives of PMCs about the strategic positions. The interviewees evaluated the situation of the Hungarian agriculture, the fruit-vegetable sector, the PMCs and the National Strategy that defines their operational framework. They gave account of their results and the problems that make the everyday operation difficult.
- Questionnaire about the operative activities for the PMC employees who take part in the execution of the programmes. The questions were about the aims and measures of the action plans. Besides this the marketing activities of the PMCs were also asked about in the questionnaires.

During the research related to the National Strategy of 2008 I made a SWOT analysis on the fruit-vegetable sector and the PMCs and the results of the two researches were compared in order to reveal the advantages and disadvantages of PMC membership to independent producers. The SWOT analysis as a method was chosen because it enables the examination external (opportunities and threats) and internal (strengths and weaknesses) factors and their changes in the recent years.

2.3. Evaluation Methodologies of Research Results

To plan and undertake the research I used relevant literature of marketing research such as Lehota's *Marketing Research in Agriculture* and *Malhotra & Simon's Marketing Research*.

The interviews of the primary research with executives of PMCs were made with CAPI (Computer Assisted Personal Interviewing) and with the help of interviewers. The interview questions were modified after the pilot research. The answers were recorded in a table and on tape. Interviewees were allowed to comment their answers so that they could add their opinions and suggestions. These were also recorded in the 'comments' section of the table. Data of the primary research were analysed with MS Excel.

In the second part of the research PMC employees were asked to complete an e-questionnaire about operative activities. The Google questionnaires were tested by professionals then finalised and sent by email. The primary data analysis was made by the same application then exported into MS Excel for further analysis with statistical methods and presentation of the results in diagrams.

3. Results

3.1. Results of the Literature Review

Besides the theoretical background of the topic I reviewed the literature of the formation and activities of producers' marketing co-operatives (PMCs) that are very important in the fruit-vegetable sector in the "Literature review" chapter. I revealed the organisational framework of cooperation and the principles of their operation. According to the institutional economics companies cannot be regarded as closed economic entities but they are institutions whose operation is fulfilled via a difficult system of relationships. Therefore, the quality of contact network of a company is a strategic question that significantly influences the competitiveness of companies. During reviewing the literature I also analysed those factors of production that define the operation of companies. Besides the traditional capital items I touched upon the importance of social capital that influences the success of cooperation. Since trust is one of the most important elements of social capital, the level of it affects the performance of the economy, sector or organisation in question, so I examined the topic of trust as an influencing factor of the successful operation of PMCs in the fruit-vegetable industry separately.

I analysed the macro- and micro-environment influencing the fruit-vegetable sector and the PMCs in order to identify those external and internal factors that affect the successful operation. Based on the literature reviewed it can be stated that the status of the cooperation is influenced by the quantity and quality of resources at the co-operation's disposal and the quality of existing network competencies.

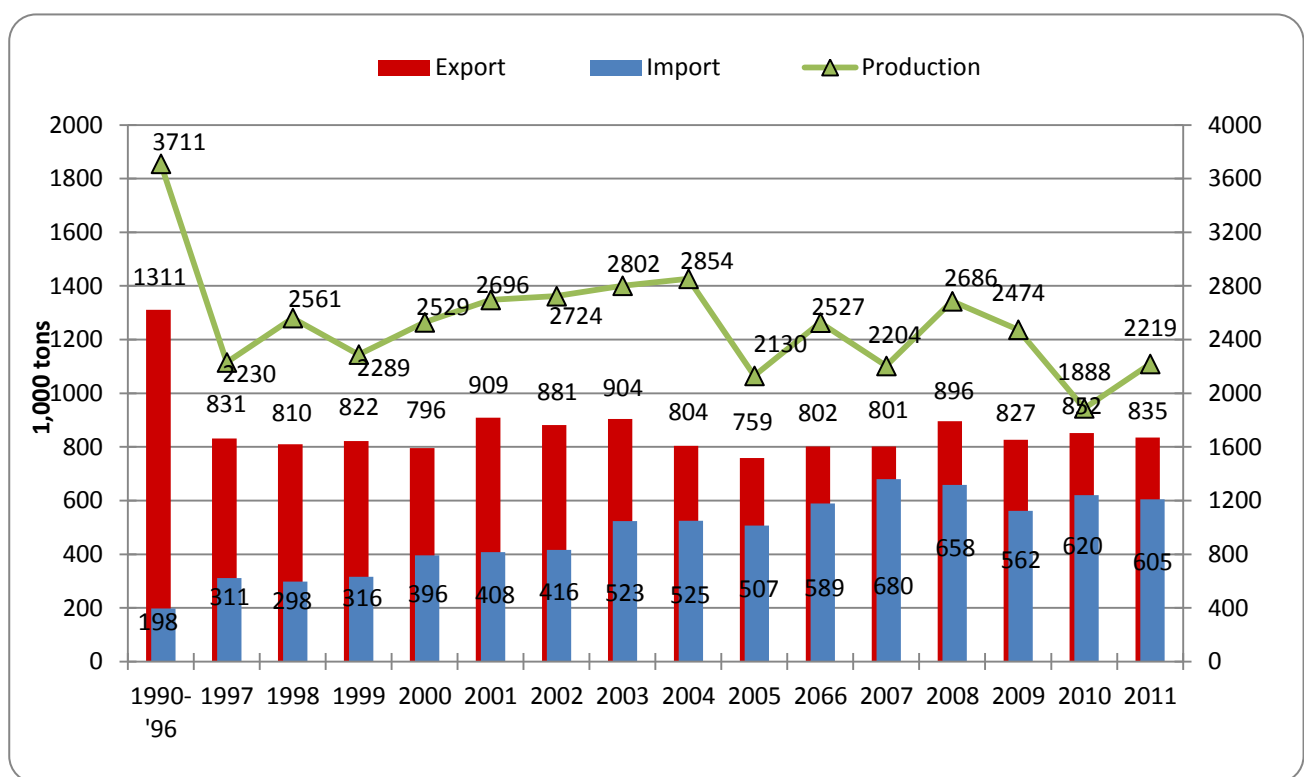
Since one of the most important areas of operation for PMCs is that of the common marketing in the literature review I dealt with the theory of inter-company marketing and the possible applications of the marketing tools.

3.2. Results of the Secondary Research

Having examined the land relations of the fruit-vegetable sector it can be stated that the carrying capacity of the sector is low due to the small lands. This feature influences negatively not only the carrying capacity but it is a considerable barrier of investing sufficient amount of capital into the companies.

Findings of the research on customer and consumer behaviour of fruit and vegetable show that consumption of fruit and vegetable is influenced by their nutrition value and physiological effect as well as the customers' real income and the price and income elasticity of the given product. The most important aspect of fruit and vegetable purchase is the price for the Hungarian customers; the

quality and origin becomes important in the case of low price only. Consumption of self-produced fruit and vegetable has been decreasing within the total consumption that shows changes in customer and consumer behaviour. According to the Central Statistical Office this ratio was 20.8% in 2000, 11.7% in 2007, 9.6% in 2010 and 9.4% in 2011. In the same period spread of international retail chains in the rural and small shop segment was significant too. This way the international retail chains reached those consumers who had not been originally targeted because of living in remote areas. It contributes to the decrease of ratio of self-produced fruit and vegetable in the total consumption. Having examined the export markets of the sector it can be stated that the production capacity available is not utilized sufficiently. The export-import balance of the sector is positive but the export surplus is constantly decreasing. (Figure 1)



Source: http://www.ksh.hu/docs/hun/xstadat/xstadat_hosszu/h_omf001a.html Downloaded 10/06/2013

Figure 1 Trends of Production and Foreign Trade of Fruit and Vegetable

The reason of this is that the amount of imported products has doubled since the mid-90s while the amount of exported products (8-900 thousand tons/year) has not changed significantly since joining the EU. Consequently the imported products have become competitors of domestic products even in the cases when the Hungarian fruit and vegetable sector is capable for high quality production.

Further investigation of domestic markets shows that the income-generating potential of the domestic processing industry that utilizes approximately half of the products is deteriorating. The

ratio of the food industry in the GDP has decreased below 2% by 2010 from the 2.7% that of before joining the European Union. (Kapronczai 2011) Because of this setback the domestic food industry purchases less and less products which means decreasing demand for producers.

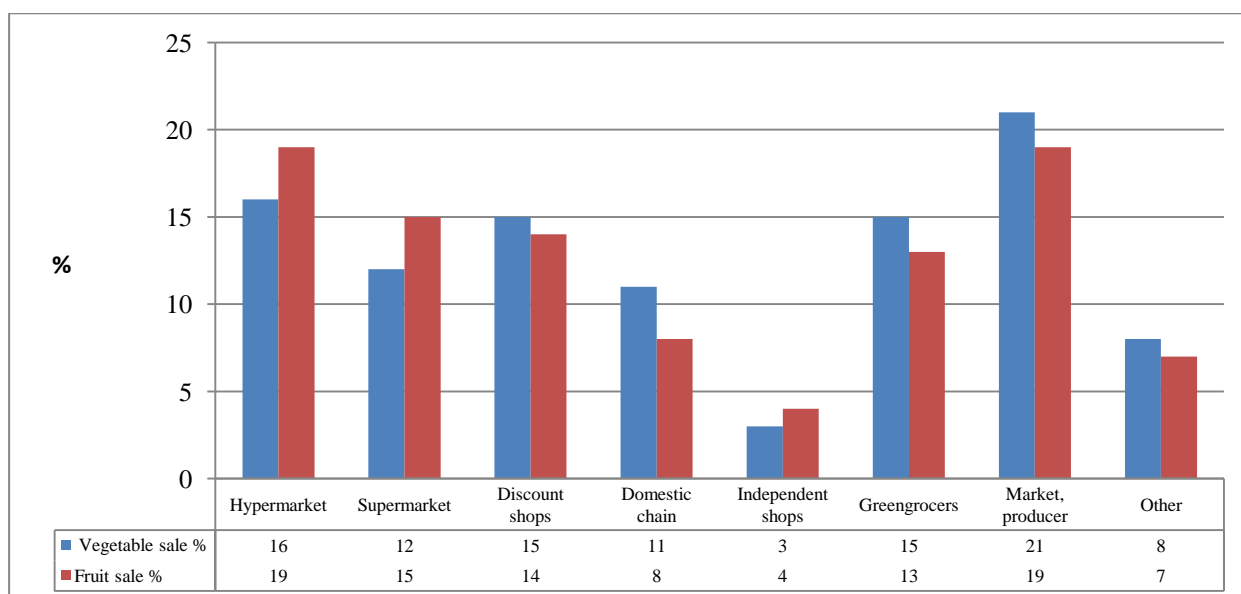
Wholesalers and wholesale markets are still significant players of fruit and vegetable trade; one third of domestic and 60-70% of imported products are estimated to be traded by them. (Table 1) Both the number of traders and the net sales income increased constantly in the period examined. It means that besides the retail chains this distribution channel is still important in the fruit and vegetable market. Although due to the presence of multi-national retail chains the role of wholesale markets is changing they are still important for producers who cannot meet the requirements of traders or the processing industry.

Table 1 Distribution of Wholesalers by Net Sales Revenue

Title	2004	2005	2006	2007	2008	2009	2010	2011
net sales revenue (bn HUF)	120.8	145.7	140.9	178.0	196.8	195.4	182.3	185.6
<i>out of it:</i>								
<i>turnover below 500 million HUF</i>	55.1	54.9	57.9	55.9	62.4	61.2	62.4	68.6
<i>turnover between 500-1000 million HUF</i>	18.5	19.8	30.1	34.8	35.0	29.6	38.7	31.4
<i>turnover between 1-3 billion HUF</i>	21.7	26.7	24.5	29.9	29.6	46.4	43.6	45.9
<i>turnover above 3 billion HUF</i>	25.5	44.3	28.3	57.5	59.9	58.2	27.6	39.7
number of wholesalers (pcs)	840	849	836	829	917	932	942	989
<i>out of it:</i>								
<i>below 500 million HUF</i>	797	799	773	756	834	852	852	909
<i>between 500-1000 million HUF</i>	26	29	43	47	47	42	57	45
<i>between 1-3 billion HUF</i>	12	14	14	18	26	29	27	29
<i>above 3 billion HUF</i>	5	7	6	8	10	9	6	6

Source: Dudás & Juhász (2013)

Having examined the retail trade it can be stated that there is strong competition in the case of fresh products. Fruit and vegetable (including potatoe) consumption is responsible for approximately 20% of the income spent on food. Nearly half of the turnover is traded by large hypermarkets and discout chains while the importance of traditional distribution channels (markets, greengrocers) decreased in the period examined. (Figure 2) So, parallel to the concentration of retail trade the fruit and vegetable trade has also been concentrated significantly.



Data from Household panel, Gfk Hungária, 2013

Figure 2 Fruit and Vegetable Purchase by Type of Shop in 2012

All the above defines not only the bargaining position of customers and suppliers but gives information on the nature of market power. To measure this, calculation of the Concentration Ratio (CR) and the Herfindahl index (H) can be used. I calculated both from the available data of 2012. (Table 2) Based on the results I concluded that the market position of retail trade in Hungary is that of an asymmetric oligopoly (CR-5 value 68.8) therefore the market concentration is moderate (Herfindahl-index value 1133.395).

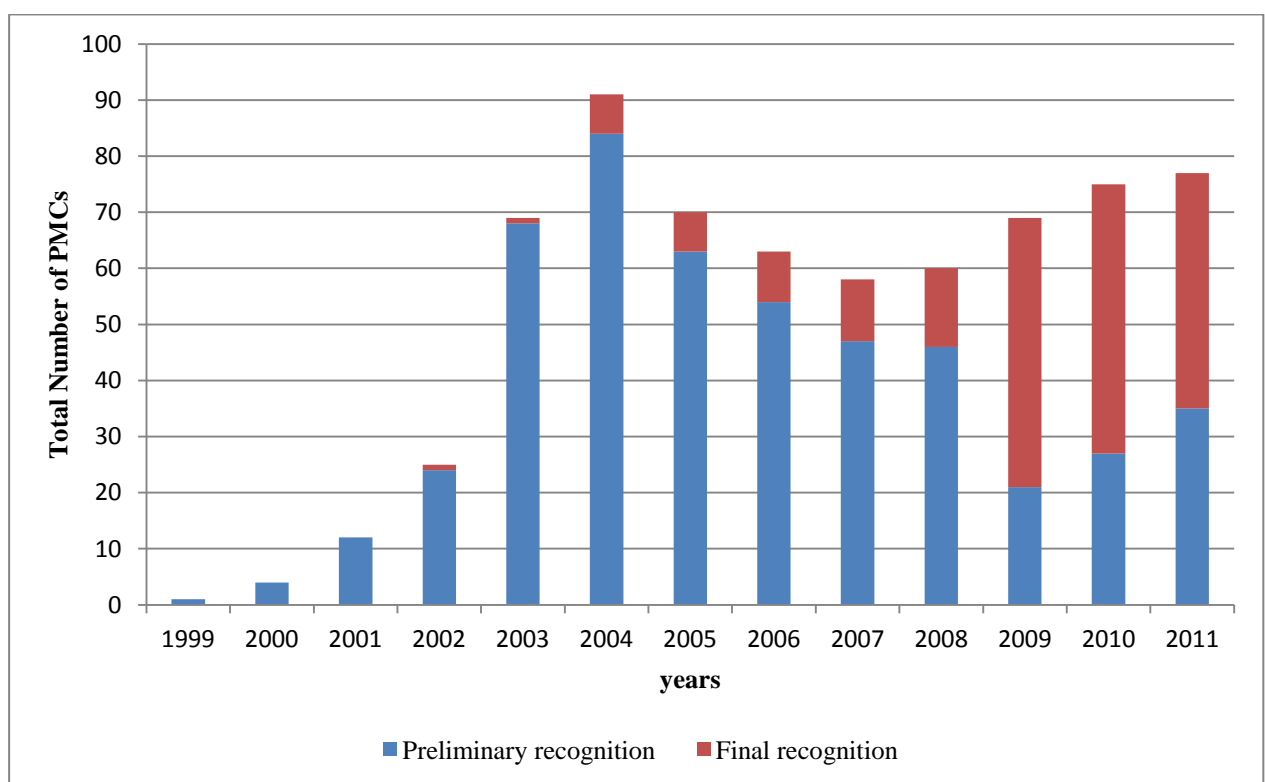
Table 2 Turnover and Market Share of Retail Chains in 2012

RETAIL CHAIN	TURNOVER (billion HUF)	MARKET SHARE (S_i)	S_i^2
1. Tesco	705.2	19.13	365.9569
2. CBA	565	15.32	234.7024
3. Coop	510	13.83	191.2689
4. Spar	389.6	10.57	111.7249
5. Reál	367	9.95	99.0025
6. Lidl	234.6	6.36	40.4496
7. Auchan	230	6.24	38.9376
8. Metro	184.1	4.99	24.9001
9. Penny Market	168.7	4.58	20.9764
10. Cora	86.1	2.34	5.4756
CR-5		68.80	-
CR-10		93.30	-
H-10		-	1133.395

Data from Nielsen (2012)

The concentration of the customer side features the supplier side as well. The multi-national chains and discount stores that undertake nearly half of the fruit and vegetable transactions aim for total exclusion of intermediaries therefore they set up their own or joint purchasing centres. They acquire significant cost-benefit with application of high volume purchases and harmonising marketing and logistics activities; their dominance is high. Based on these market features it can be stated that fruit and vegetable producers cannot improve their bargaining power without concentrating supply.

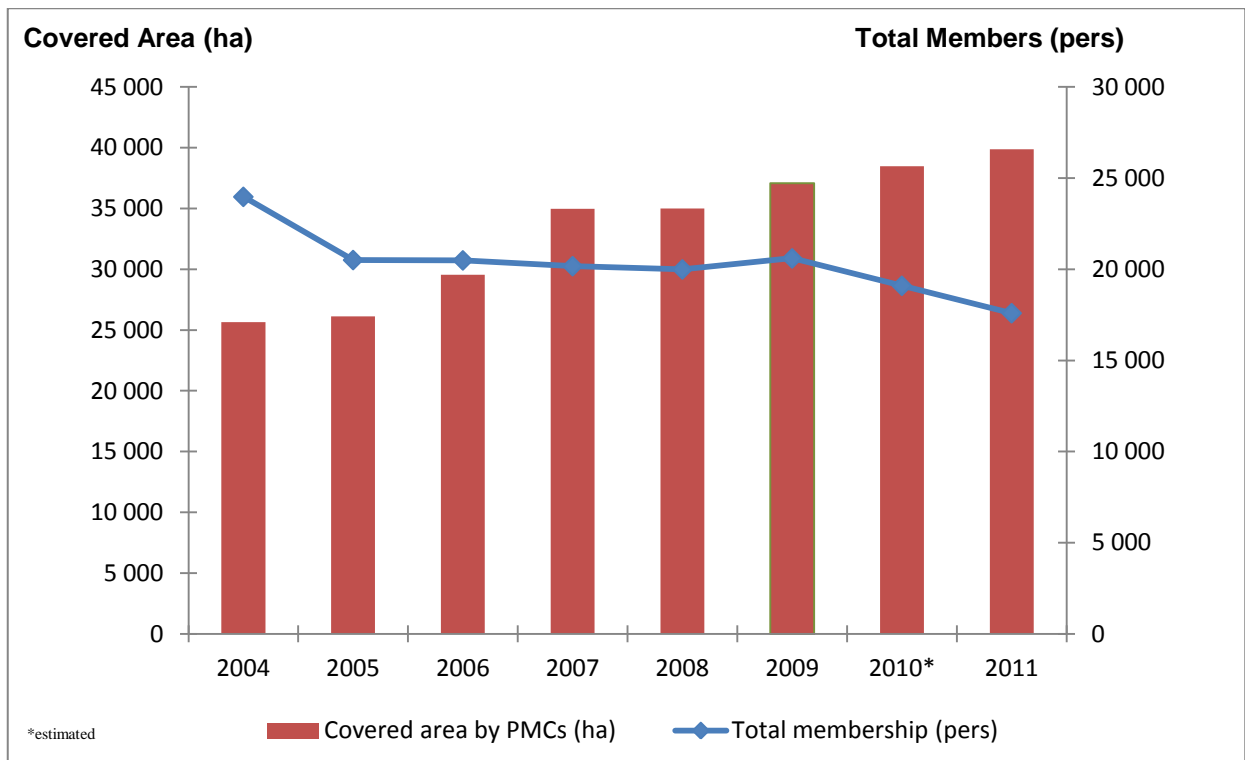
Having recognised the market challenges described above and considered the expected subsidy programmes available for PMCs the first producers’ marketing co-operatives were established in Hungary. Figure 3 shows the development of numbers of PMCs.



Data from Ministry of Rural Development

Figure 3 Development of Number of PMCs (1999 – 2012)

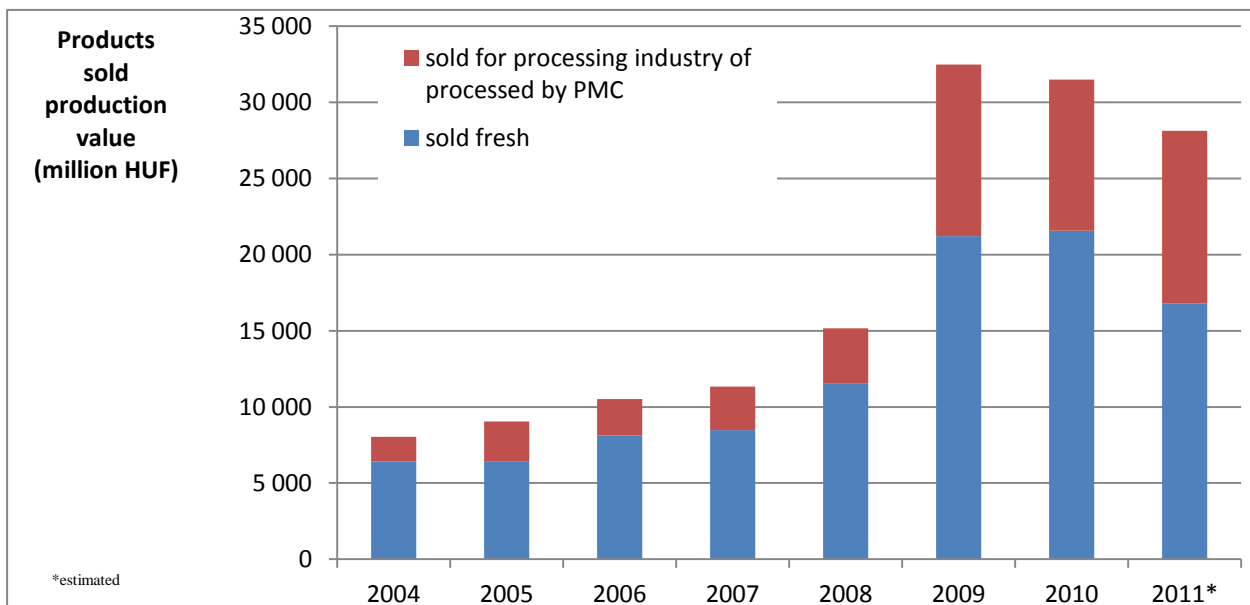
Dudás and Juhász (2013) divided the development of PMCs into 4 stages: “Initial difficulties” until 2002, “Joining peak” 2002-2004, “Concentration” 2005-2009, and “Stagnation” from 2010 until now. My research supports the fact that PMCs are in the stagnation stage but while the number of members was decreasing the area covered was increasing which means that there is a concentration process within the PMCs. (Figure 4)



Data from the National Strategy 2008 and the Ministry of Rural Development Department of Agricultural Market

Figure 4 Development of Membership and Covered Area by PMCs (2004-2011)

Having analysed the activities of PMCs it can be stated that these organisations are present in both the markets of consumer products and business products. (Figure 5)



Data from the Ministry of Rural Development Department of Agricultural Market

Figure 5 Quantity and Distribution of Product Sales of PMCs by Markets (2004 – 2011)

Statistical data show that the total amount of fruit and vegetable sold by PMCs was constantly increasing until 2009 then the organisations lost some of their market share of fresh products. Therefore the total sales decreased too and the ratio of business to business sale increased within the total sales. It can be concluded that PMCs can currently meet the challenges of retail market less than their foreign competitors. If this tendency continues it may happen that PMCs become producers of raw materials for business partners and their role will be smaller in domestic fresh market sales. In order to reveal the background of these processes I examined the PMCs that possessed recognised programmes.

The Hungarian Producers' marketing co-operations operate according to the *National Strategies for Sustainable Operational Programmes in the Fruit and Vegetable Sector of 2008*. It was revised in 2012 entitled as "*The Evaluation of the National Strategies for Sustainable Development in the Vegetable and Fruit Sector*" The aim of the evaluation was to examine the National Strategy based on the experiences of the operation so far and draw conclusions that may help the PMCs to improve their work. I took part in the research as a leading expert.

The basis of the revision of the strategic plan was a SWOT analysis of 2007 based on which the objectives and tasks to achieve were set. The 5 years that passed since then brought several changes in the macro- and microenvironment of the sector therefore through the executive interviews I examined how the external and internal relations of PMCs changed compared to the results of the SWOT analysis. Based on the answers I made a SWOT analysis of the fruit and vegetable sector and the PMCs of the sector then compared the results to reveal the differences of PMCs member and independent producers.

The following differences can be detected between the situation of fruit and vegetable PMCs and the fruit and vegetable sector:

- In case of strengths a significant difference is that the professional management of PMCs is committed to cooperation. They are aware of modern technologies and environmental problems. PMCs realised several investments by subsidies which means advantage against other players of the sector. The implementation of quality assurance systems provides competitive advantage for the organisation in the markets sensitive to the safe production of food. Application of state of the art and innovative solutions is an advantage of PMCs not only in production but in marketing too. Their developments in logistics help to concentrate the marketing of products. Their role in employment is considerable in production, procession and marketing. An advantage arising from the organisation is that in case of financial problems PMCs can help their members to overcome temporary problems.

- Concerning the opportunities the advantage of PMCs is that based on their preparedness and experience they can apply for subsidies with better chances than their independent competitors. Having concentrated their supply PMCs can appear on markets where independent producers cannot. It is true that bigger producers can find their markets via their relationships but smaller producers that provide the majority of the sector can succeed with difficulties. It is also advantageous that PMCs who purchase in bulk can defend themselves against input price increase easier than other players of the sector.
- Compared to the sector PMCs' weakness is the bureaucratic operation; application for the resources available is bound to complex rules. It makes PMCs less flexible than independent players. The conflict of interest among bigger and smaller producers within PMCs is a specific weakness of co-operations. This conflict appears in the sector too, but independent producers do not have to harmonise their activities while PMCs must which makes the conflict more tense.
- Most weaknesses are related to those threats that threaten the sector itself but PMCs cannot or can hardly avoid them. Some of these are the high ratio of black market, anomalies of taxation, etc. Black market poses bigger financial and moral threat on PMCs than on the sector itself because the organisations' compliant behaviour means substantial competitive disadvantage against the less conform players. It does not make PMCs attractive despite the obvious advantages of membership. Interviewees expect positive discrimination and stricter legal actions against those who offend the rules so that disobedient players cannot win competitive advantage over obedient ones. It can be stated that members of PMCs will always be at disadvantage in this respect unless the economy and the fruit and vegetable sector within is whitened.

In my research I examined the productivity and efficiency of execution of operative programmes of the PMCs. The results showed that some actions of the operative programmes serve achievement of the objectives at different degrees:

- Production planning activities contribute to the successful operation of PMCs. The activity satisfies the requirements but factors originating from the macro- and microenvironment make long term planning difficult.
- Resources for improving or maintaining the quality of products were successfully and effectively used so these activities contributed to the improvement and maintaining of the quality of products. In the period of investigation PMCs became important partners

of fruit and vegetable processing companies and their position was enhanced by the quality assurance systems employed.

- Out of activities concerning marketing promotion and communication were the most successful, other marketing tools were less used. In order to improve the ratio of fresh market consumption it would be necessary to devote more resources and pay more attention to marketing and especially marketing logistics.
- Environmental actions contribute successfully and effectively but moderately to the operation of the organisations. The most successful actions were the ones of soil and water protection as well as decreasing the amount of waste.
- Research and experimental production activities contributed to the successful operation of PMCs to a certain extent. Although there is claim to research and experimental activities but PMCs are not prepared for organising such activities.
- Similarly, training activities and activities related to advisory services partially contributed to the successful operation of PMCs. It spoils the efficiency of trainings that there are few experts in various areas and there is lack of financial resources for hiring advisors. Trainings cannot replace permanent advisory work.
- Other subsidized activities contributed to success a little; the organisations hardly used the opportunities offered by provisions therefore their efficiency was at satisfactory level.
- Preventive and handling tools of crisis contributed to PMCs' crisis preventing activities to a lesser extent. PMCs did not apply the classic tools of preventing crises though it would be important for them to fill their funds up so that they could support members in bad times. Due to lack of trust and conflicting short term interest of members organisation do not take advantage of this.

All in all it can be stated that provisions of the National Strategy served the operation programmes of PMCs effectively but with different efficiency. Since the operational programmes are not flexible enough regulations forced the PMCs to make unnecessary steps instead of covering the actual operational expenses with redistributing the resources. It shows that provisions should be changed in order to support producers' cooperations more efficiently.

As I was examining the operation of PMCs I touched the questions of marketing activities. My statements are the following:

- Interviewees think that marketing is important and it is a primary task of PMCs.
- Respondents think that there is not enough expertise within the organisation to undertake these activities efficiently. PMCs do not employ independent marketing experts; this task is done by the executives, mainly. It accounts for outsourcing this task completely or the fact that interviewees would entrust other professionals to do it.
- Marketing activities are not well-planned. Only one fifth of PMCs examined possess a marketing plan while 17% do not make such plan at all. More than one fourth of the operations interviewed do not spend on marketing while 16.5% set apart less than 1 million HUF for this reason. There was no measurable relation between the production value of products marketed by the organisations and the amount of marketing spending.
- Marketing activities of PMCs are aimed at external stakeholders mainly (customers, consumers); members of PMCs receive less attention. The organisations examined do not check whether their activities reached the target group or with what efficiency they could influence them. Two thirds of the interviewed do not examine the efficiency of their spending.
- In relation with the marketing mix it can be stated that the organisations partially use the available tools.
 - Within the product policy product development and definition of product range are regularly completed but beyond that their techniques are quite poor.
 - Having examined the pricing policy it is obvious that the method of price differentiation among customers is generally used. Selling price is often the result of individual deals that are affected by personal relations and the dominant position.
 - The high ratio direct supply to wholesalers and processing industry refers to the fact that these organisations concentrate on business markets. 40% of respondent have relations with retailers while nearly one third of producers supply the 'school fruit' programme. Local sales, private shops and e-commerce are not typical practices and delivery to own processing plant is also rare.
 - Use of marketing communication tools shows a mixed picture. 22% of respondents do not pursue any marketing communication activities; the others use mainly commercials, sales promotions and PR tools.

The findings above show that the activities the operations pursue as marketing are not conscious enough.

To sum up it can be stated that all concerned are interested in real cooperation in the long run because efficient use of subsidies and the benefits of this can be utilized only with cooperation. However, some members take subsidies as objectives rather than tools. Strained relations of PMCs members originate partly from this practice because the different system of objectives leads to conflicts, then mass withdrawals and finally disintegration. For the sake of preventing this as well as the successful operation of PMCs it is not enough to examine the external environment but it is necessary to evaluate the internal conditions as well from the beginning. It must be examined whether the principles of cooperation and network competencies are available. Measuring this is not easy since the features to be examined can hardly be assessed objectively. I developed a tool for evaluation that is appropriate for the comparison of players.

The tool was introduced with the analysis of an organisation that was founded at the beginning of 2011. The development of the organisation was examined by repeating the evaluation at different times. (Table 3) Since some members were replaced after 2012 the changes were considered in the evaluation.

Table 3 Development of Status of Cooperation

Factors	Assessment 1	Assessment 2	Assessment 3
Resources			
Financial Resources	1.49	1.18	2.48
Material Resources	3.18	3.46	2.62
Weighted Average of Resources	2.33	2.32	2.55
Network Competencies			
Communication Competencies	2.35	3.17	3.64
Co-operative Culture	2.46	3.04	2.77
Trust	3.15	3.45	2.75
Strategic Thinking Skills	2.46	2.15	2.15
Competency of Co-operation Binding	2.18	2.26	2.85
Weighted Average of Network Comp.	2.52	2.81	2.83
State of Co-operation	Potential Network	Potential Network	Potential Network

The results are evaluated as follows:

- Neither the quantity nor the quality of resources put at the networks' disposal were improved during the period examined. The original members of the cooperative did not contribute sufficiently to the success in terms of financial or material resources. After the replacement of certain members the situation became worse; although the financial resources improved the quantity of material resources decreased.

- In the case of network competencies it can be stated that the situation significantly deteriorated due to the exit of old and entry of new members. After the changes trust notably weakened as well as the judgement of cooperative competencies and culture. Lack of strategic thinking makes the development of the cooperative examined even more difficult.

As a result of the examination it also can be stated that the measurement tool gives appropriate feedback on the status of the operation.

3.3. Justification of Hypotheses

Based on the primary and secondary researches presented above I evaluate the justification of the hypotheses in what follows.

H-01: Justified

The macro- and microenvironmental changes of the change of regime have significantly reshaped the operation of the fruit and vegetable sector in Hungary.

As a result of the changes of land structure in the supply side of the fruit and vegetable sector the land structure became scattered. In the asymmetric oligopolic market the producers with low market potential should sell their products in a concentrating and mainly demand-controlled market which offers weak bargaining position for them not only in the domestic but the international markets as well.

H-02: Partly justified

The cooperation of producers may improve their bargaining power against traders and the processing industry with concentration of supply and harmonised marketing activities. PMCs supported by the European Union provide appropriate operational framework for this because they concentrate the supply of fruit and vegetable producers hence improve their bargaining power in the market.

The bargaining position can be strengthened with those producers' cooperations that may improve producers' market positions and the bargaining power of players of the sector via optimising production and transaction costs. The SWOT analysis of the fruit and vegetable sector and the PMCs pointed out that PMC membership is advantageous for members. In spite of this there are factors (e.g. bureaucracy) that do not motivate membership.

H-03: Justified

Out of the resources at the sector's disposal the scarcest is the social capital that hinders successful cooperation.

Trust is a fundamental component of social capital that determines this problem. Instability of legislation and strong presence of black market make the situation more complicated, weaken trust among stakeholders which reacts on the performance of the fruit and vegetable sector and the PMCs operating in this sector and the marketing cooperation among PMCs. Because of lack of trust PMCs are not attractive enough for producers therefore organisation of the sector at a desired level fails. If organisations excluded stowaways who play upon the weaknesses of the system, membership could be more attractive. Currently PMCs do not possess effective tools against those who violate the rules although it would be desirable to strengthen trust.

H-04: Justified

There is a conflict of interest between farmers of smaller or larger lands that disturbs the operation of PMCs. These conflicts strain the operations from inside and may lead to a mass withdrawal.

Liquidity problems are not characteristic for those who have relatively large lands; they join the PMC to obtain subsidies for investment and access distribution channels. For those who have smaller farms membership is of vital importance to solve marketing problems as well as receive current asset support the PMC – it poses additional burden on the organisation. These conflicting interests cause substantial internal stress that may lead to mass withdrawal. The stress is further increased by the fact that smaller producers mean a relatively big administrative load for the management of PMCs therefore they do not prevent withdrawal of small members. Furthermore, because of lack of capital producers of less financial resources are defenceless against black market so payment in cash is more attractive for them than terms of payment offered by PMCs.

H-05 - Justified

Bureaucratic constraints of the operation of PMCs may keep some producers away from the co-operations because the black market offers advantages over complying with the regulations in the short run.

Financing systems are rigid; some elements of the subsidies are inflexible and bureaucratic. Therefore some elements of the operative programme cannot be executed efficiently. Payment is slow therefore the short-term financial benefits offered by the black market are more attractive than

the available subsidies. Black market poses bigger financial and moral threat on PMCs than on the sector itself because the organisations' compliant behaviour means substantial competitive disadvantage against the less conform players. It does not make PMCs attractive despite to the obvious advantages of membership.

H-06 - Justified

Successful operation of PMCs is influenced by external environmental factors and internal factors to the same extent. A co-operation will be successful if the essential resources and network competencies are available.

The available subsidies make membership attractive to such an extent that access to these subsidies becomes the objective instead of real cooperation. In order to avoid this it is advisable to follow the resources and network competencies necessary for the cooperation from the beginning. The development of the organisation can be controlled by measuring these factors which is important for successful operation and efficient utilization of subsidies.

H-07 - Justified

If markets are scattered and are in shortage of capital there is a need for inter-company (meso) marketing. There is often a lack of well trained and widely experienced marketing experts for this work.

There are substantial inadequacies in the marketing activities of PMCs therefore the volumen of fresh fruit and vegetable sales is decreasing while supply of the processing industry is increasing. The ratio of appropriately sorted and prepacked goods is still low. Prices cannot be planned and change from year to year due to lack of long-term supply contracts. In order to increase domestic consumption marketing communication must be developed. Marketing cooperation among PMCs is weak although there is a need for inter-company marketing because concentrated markets force formation of secondary PMCs to compensate buying centres of retail chains. These secondary PMCs would work as commercial houses and should be managed by experts instead of producers.

3.4. New and Original Scholarly Achievements

I revealed and identified the external and internal reasons of stagnation in organisation:

- 1. I justified the effects of specific features of macro-environment (taxation, tenders, etc.) on PMCs' operation and organisation with scientific methods.** I made suggestions for achieving the required objectives (reorganisation of the primary producer and VAT system, repression of black market, etc.).

2. **Based on calculation of the CR-5 index and the Herfindal-index I pointed out that the markets of the fruit and vegetable sector are asymmetric oligopolies in which the concentration of demand is moderate.** As a consequence players of the fruit and vegetable sector sell their products in demand-driven markets. Due to the weak bargaining position the ratio of imported fruit and vegetable products is increasing even in the case of products which are traditionally grown domestically. Statistics also show that PMCs are rather suppliers of processing industry; their importance in fresh fruit and vegetable markets is decreasing.
3. **Polarised land sizes cause significant internal problem for PMCs as well as the fruit and vegetable sector.** It hinders profitable farming for those with smaller lands and causes conflicts among PMC members. There are substantial differences among members in terms of resources which affects their opportunities and objectives. By reason of this the different interest groups of producers need different types of alliances.
4. **I developed a framework from the model of Pihkala et. al. to evaluate the internal relations of a PMC which is appropriate for measuring changes in resources as well as network competencies.** For the sake of long-term successful cooperation it is advisable to examine the necessary resources and those network competencies without which the organisations cannot reach the stage of organisational development that could provide real benefits for members.
5. **The main obstacle of quantitative and qualitative development of cooperation is the reduced social capital and within this the lack of trust.** The general lack of trust of the Hungarian society has negative effect on the sector itself and within that the operation PMCs because it hinders increase of organisation as well as repression of the black market.
6. **My reseach showed that executives of PMCs are professionals committed to cooperation. The leading positions are fulfilled by experts of the horticulture sector but there are no marketing experts which is an impeding factor in development.** The subsidizing system does not motivate this and organisations do not recognise that costs of a marketing expert would be returned relatively soon.

4. Conclusion and Suggestions

I introduce the advantageous and disadvantageous features of PMCs. My conclusions and suggestions are as follows:

PMCs operate by several rules and provisions of the operating programmes that are based on the principles of The National Strategy. The operating programmes of PMCs serve as strategic plans that must be made for 5 years. Success of the provisions of operating programmes depends on the economic environment and the weather to a great extent. The extreme weather conditions make planning the expectable turnover from time to time while frequent changes in legislation does not favour long-term planning either. Another difficulty is that PMCs must call for bids 3-5 years ahead for planning but economic changes affect the contest of these substantially. Regulations should be much more flexible to support successful execution of operational programmes that is limits of divergence from the plans should be wider. The system of feedback mechanisms should enable fast response to changes. This would require a less bureaucratic directing and controlling system; e.g. higher proportion of operation costs should be free cash paid in allowance.

The reporting duty and the payment administration set the organisations considerable tasks which make the operation more difficult. These could be reduced with tuning the regulations and use of modern information technology (e.g. member register, yearly reports, sale tracking, etc.)

Standards of marketing could be improved with employing marketing experts and forming secondary or tertiary organisations of PMCs that could balance the dominating bargaining power of buying centres and processing plants. I suggest that these marketing organisations should undertake domestic and international market researches to understand the changing requirements of consumers and based on these they should prepare recommendations or reference points for primary PMCs they can use for identifying the quality and quantity of products to produce. These marketing centres can help in developing international relations and the export, and in making the domestic fruit and vegetable more popular for consumers. Therefore it is essential that PMCs should carry such marketing activities that can improve the bargaining power of producers against the processing industry and retailers.

Changes are necessary to increase the role of PMCs in employment in the fruit and vegetable sector and to contribute to the ability of the regions to retain the population.

5. Summary

The primary role of the fruit and vegetable sector is to produce products from the natural resources available that satisfy the domestic demand of customers and processing industry as well as the export needs. Changes in property at the change of regime reshaped the ownership structure of fruit and vegetable sector creating a polarised propriety. Parallel with the ownership changes the market chances of the sector changed drastically as well. The process of concentration in the food industry and food retail created new challenges to the growers who had to realize that the need to cooperate is inevitable not only because of effectiveness, but market relations and sales opportunities require that. Besides horizontal connections the increase of quality aspects require more efficient cooperation of vertically related growers, processing partners and traders in the food chain which is the common interest of producers and the Hungarian state.

Despite the successfully operating co-operatives and manufacturing alliances in the European Union, the idea of any cooperation is not popular in Hungary at all. In spite of the low willingness to cooperate for historical reasons, the majority of Hungarian fruit & vegetable growers realized in the 90's that they have to follow the European example of cooperation because this was their only chance to compete with the much stronger processing industry and food retailing companies. Getting closer to the turn of millennium the players of the fruit & vegetable sector had high hopes for the EU accession namely that by increasing effectiveness new export markets will open and the development of the sector will be on a growing track due to the increase in market demand. Another hope was that the capital weak sector will have access to financial support after joining EU which would improve profitability. Since the subsidizing policy of the European Union support both formation and operation of cooperative activities of producers besides other benefits the expected subsidies gave impetus for establishing the first producers' groups and producers' sales organizations at the end of the 90s.

After EU accession, however, part of the expected advantages did not come through. Therefore nowadays the rate of organized operation as compared to the planned 40% only 20% of the Hungarian fruit & vegetable growers work as a member of TЭСZ (Producers' Marketing Cooperative; PMC). This ratio did not increase in the past years despite several acknowledged advantages of PMCs. One of the objectives of my dissertation is to explore the reasons why it has stopped and what the obstacles are of further development. To find out the reasons I examined the operation of organizations and during the analysis identified the major factors which hinder the increase of organized level. I found that organizational structures developed according to EU rules are not flexible enough and not applicable for Hungarian circumstances. Another factor against

organisations is the wide spread presence of black economy giving short term advantages which growers cannot ignore as they face constant financing problems. Black economy destroys trust among players in economy which is bad for the whole economy and society therefore the government should act stronger to reduce it. It would be necessary to decrease bureaucracy, change taxation and make labour law more flexible.

Hungarian PMCs can get accustomed to the challenges of external environment if their activity is not constrained by the lack of basic resources. Based on my research it can be concluded that operation of PMCs is beneficial for both members and the sector itself. Although their operation must be improved in several areas, having overcome the problems PMCs may provide appropriate operational framework to assist fruit and vegetable producers' work.

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