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VEGETABLE PRODUCTION IN POLAND AND SELECTED COUNTRIES OF THE EUROPEAN UNION – STATE OF ART AND CONDITIONS OF DEVELOPMENT

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Abstract
The paper aims to analyze the state of the art and the conditions of development of vegetable production in Poland and selected countries of the European Union. There were analyzed data coming from official statistical sources for the period 2002-2007. It argues that the vegetable sector is developing significantly, which results from market cyclical factors and strong competitive advantages as well as the EU founds available for sector development. The further development of the sector will depend on the dynamics of increasing competitive positions on the EU Single Market as well as taking advantages of EU founds and the level of cooperation between sector's stakeholders.

Key Words: vegetable sector, conditions of development, sector's organization

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Introduction

In 2008 the total production of fresh vegetables in the world amounted to 893.4 million tons, with the total crop area of 52.44 million ha. In comparison, one year earlier that production amounted correspondingly to 889.7 million tons, and the crop area 52.04 million ha. The biggest harvest of vegetables took place last year in Asia – approximately 658.6 million tons, then in Europe – over 94.5 million tons, less than 41.0 million tons in North America, over 22.0 million tons in South America, and over 55.75 millions tons in Africa. In comparison, just at the beginning of eighties the total production of vegetables and fruit in the world amounted to 630.0 million tons, in the nineties it was 820.0 million tons, and the beginning of the 21st century, i.e. the years 2000 – 2001 brought the production volume growth up to 1.20 billion tons [Długokęcka, 2008]. China is for a few years the biggest vegetables producer in the world, producing approximately 50% of global production. In the first ten of the vegetables producers in the world there are two European Union countries: Italy (13.6 million tons) and Spain (12.7 million tons).

Poland takes 4th place in the global vegetables production, after Italy, Spain and France. In the years 2004 – 2007 the vegetables production in Poland amounted to approximately 5.5 million tons, which was approximately 9% of total vegetables crop in EU-

27. Poland is the biggest producer of garden beet, cabbage and carrot in EU, with crops fractions accordingly: 46%, 23%, and 15%. In production of cucumber and onion we take the second place in EU. Poland is the second producer, after Belgium, of refrigerated vegetables in EU, and the biggest producer of sour vegetables and dried carrot. Supplies from our country are very important in covering the EU demand for onion, cauliflower, and refrigerated, sour and dried vegetables.

The vegetable growing is one of the most important parts of Polish gardening. The vegetables production in Poland amounted over PLN 4.8 billion in 2007, which was approximately 6% of global agricultural production and approximately 10% of global vegetable production. The agricultural goods production of vegetables amounted over PLN 3.3 billion, which was over 6% and 14% in the agricultural and vegetable production, accordingly. The export value of vegetables and their preserves amounted to € 463 million, which was approximately 5% of the total agricultural and food export [Central Statistical Office].

Methodology and data sources

This document presents the conditions of vegetables production growth in Poland, as one of the biggest vegetables producer in EU, and in selected EU countries. The analysis includes the production and consumption of vegetables, as well as the organizational and legal solutions for that sector, especially in the context of EU support. The time range of performed analysis has been selected for purpose, due to Poland accession to the EU in 2004, and included the years 2002 – 2007. The performed analysis has been based upon the materials and source data from the institutions engaged in the organization, supervision and monitoring of sector, using the source documents analysis tools, as well as descriptive statistics methods and heuristic methods.

1. Production of vegetables in Poland and selected EU countries

The vegetables production in EU-27 in the years 2002 – 2007 amounted to 69 million tons on the average, including approximately 55.1 million tons in EU-15 countries, approximately 13.9 million tons in EU-12 countries, and almost 5.5 million tons in Poland (table 1). In calculation for 1 inhabitant, the vegetables production level in EU-27 amounted approximately to 140 kg. The vegetables production in EU-27 has dropped from 69.1 in 2002 to 64.9 million tons in 2007 (drop by 6.1%). In the studied period there was the production drop in EU-15 countries, from 56 million tons to 51.4 million tons (drop by 8.2%), and it was the biggest in 2006 (drop by 6.6%). The vegetables production in EU-12 countries in the analysed years maintained the similar level, approximately 13 million tons, only in the years 2003 – 2004 it amounted to 15 million tons. In the years 2002 – 2007 the vegetables production in Poland has increased from 4.9 to 5.9 million tons (raise by 1 million tons, i.e. 20.4%). In the analysed period the average annual raise amounted to 3.4%, but there were fluctuations in the vegetables production. In the years 2005 – 2006 there was the production drop by 3.4 and 5.4% accordingly, and in the years 2003 – 2004 the production growth by 8.2, 9.4 and 11.3% accordingly.

Table 1. Vegetable production In the European Union (mln t)

Item	2002	2003	2004	2005	2006	2007
UE-27	69,1	71,1	71,7	70,9	66,2	64,9
UE-15	56,0	56,0	56,7	57,7	52,5	51,4
UE-12	13,1	15,1	15,0	13,2	13,7	13,5
Polska	**4,9**	**5,3**	**5,8**	**5,6**	**5,3**	**5,9**

Source: Analizy rynkowe: Rynek owoców i warzyw nr 33/2008.

In the individual EU countries the production changes rate in the years 1995 – 2006 was diversified, either in amount and direction. The EU-27 countries with the vegetables production constant growth include: Italy, Spain, Netherlands and Austria. In Poland in the years 1995 – 2006 there was small drop trend noticeable (revision of statistical data after 2002, performed by the Central Statistical Office after the General National Census). Especially visible drop trends in the "new" European countries have been noticed, where there were problems with ownership transformations (Bulgaria, Czech Republic, Lithuania, Slovakia and Hungary). In EU there is high geographical production concentration. In the countries with the highest vegetables production (Italy, Spain, France, Poland) almost 60% of EU-27 production have been produced (table 2).

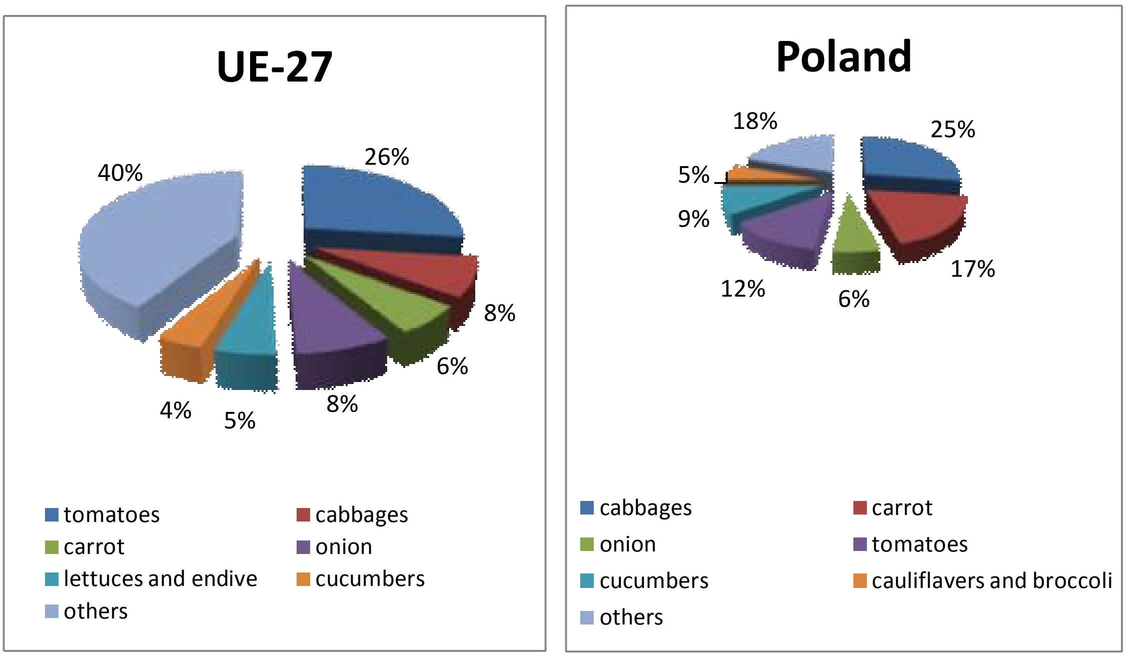

Chart 1. Structure of vegetable production in Poland and EU-27 in th eyears 2004-2006

Source: Źródło: Nosecka B., Stryjewska I., Mierwiński, 2008: Perspektywy polskiego rynku warzyw i ich przetworów, Skierniewicki Portal Ogrodniczy, http://www.horticentre.pl/index.php/marketarticle/prop/id/15, read 2009

The species structure of produced vegetables in EU-27 and in Poland is characterized by differences, but also similarities (chart 1). The clearly dominating species in the production structure of EU-27 were tomatoes (26%), and in Poland – cabbage (25%). Four species of vegetables: cabbage, carrot, onion and tomatoes in Poland amounted to 69%, and in EU-27 countries – 51%. The share of 6 most often cultivated vegetables amounted in Poland in turn to 80%, and in EU-27 – almost to 60%. The share of other vegetables in Poland amounted only to 18%, but in EU-27 – to 40%. This shows that in comparison with other EU-27 countries, Poland has quite low diversified and modest structure of cultivated vegetables.

Table 2. Changes in vegetable production in the UE in the years 1995-2006

Country	Vegetable harvests (1000 t)		Share in the harvest in the UE-27 (in %)
	1995-1997	2004-2006	
UE-27	**64 473**	**69 207**	**100,0**

Italy	14 442	15 826	22,9
Spain	11 014	13 084	18,9
France	6 400	6 069	8,8
Poland	**5 700**	**5 550**	**8,0**
Romania	4 214	4 248	6,1
The Nederlands	3 616	4 235	6,1
Germany	3 211	3 195	4,6
United Kingdom	2 942	2 726	3,9
Hungary	1 597	1 679	2,4
Bulgaria	1 440	767	1,1

Sources: Nosecka B., Stryjewska I., Mierwiński, 2008: Perspektywy polskiego rynku warzyw i ich przetworów, Skierniewicki Portal Ogrodniczy, http://www.horticentre.pl/index.php/marketarticle/prop/id/15, odczytane – luty 2009

The total vegetables production in Poland in the years 2002 – 2007 amounted from 4.7 to 5.7 million tons, and the share of cabbage, carrot and onion amounted over 60% (table 3). In Poland vegetables are produced mostly on the fields. The ground vegetables production level in the analysed years amounted 3.9 – 4.9 million tons. The greenhouse vegetables production amounted from 671 thousand tons in 2003 to almost 723 thousand tons in 2007. The greenhouse vegetables in 2007 were 12.6% of total crops.

Table 3. Vegetable production in Poland in the years 2002-2007 (in 1000 t)

Item	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Vegetable in total	**4701,2**	**5090,8**	**5590,0**	**5458,3**	**5120,0**	**5710,0**
Ground vegetable	**3947,2**	**4419,6**	**4916,2**	**4785,3**	**4408,0**	**4987,0**
Cabbage	1188,2	1236,7	1371,0	1320,0	1189,4	1325,0
Cauliflower	176,4	188,8	205,7	204,3	211,8	228,0
Onion	584,9	678,3	865,7	714,1	590,2	725,0
Carrot	692,1	834,6	927,9	929,0	833,2	938,0
Red beet	311,2	333,5	356,9	356,0	340,6	375,0
Cucumbers	259,7	289,7	255,9	257,5	271,9	293,0
Tomatoes	221,4	234,1	212,7	232,4	246,7	277,0
Others	513,0	623,9	720,4	772,0	724,2	797,0
Greenhouse vegetable	**754,0**	**671,2**	**673,8**	**673,0**	**712,0**	**723,0**
Tomato	393,0	372,3	369,6	369,0	405,0	412,0
Cucumbers	223,0	198,7	208	211,0	220,0	218,0
Others	138,0	100,2	96,2	93,0	87,0	92,0

Sournce: Analizy rynkowe: Rynek owoców i warzyw nr 23/2005 i 33/2008.

2. Consumption of vegetables and their products

The consumption of vegetables and their products in the years 2002 – 2007 amounted to 111 kg per inhabitant on the average (according to the balance data: production, export and import). The vegetables consumption in the years 2002 – 2006 in turn varied from 109 to 111 kg, and raised in 2007 to 115 kg (table 4).

Table 4. Consumption of selected ford products in Poland in the years 2002-2007 [kg/capita][1]

Item	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Grains	120	120	119	119	117	115
Potato	131	130	129	126	121	121
Vegetables	**111**	**110**	**111**	**110**	**109**	**115**

[1] Balance data

Fruits	56,7	54,5	55,0	54,1	54,4	41,0
Meat	69,5	72,1	71,8	71,2	74,3	77,0
Milk	182	181	174	173	176	178

Source: Analiza produkcyjno-ekonomicznej sytuacji rolnictwa i gospodarki żywnościowej w 2007, IERiGŻ-PIB

The consumption of fresh, chilled and refrigerated vegetables and their products in Poland, according to the research of family budgets carried out by Central Statistical Office (excluding consumption in the public catering institutions, i.e. hospitals, bars, restaurants, etc.) amounted in the years 2002 – 2007 to 63.8 kg per inhabitant on the average. In the analysed period consumption of vegetables and their product dropped from 64.5 kg to 60.5 kg in 2007 (drop by 6.3%). The highest consumption of vegetables has been noticed in 2005, and the lowest in 2007, and it amounted to 67.1 and 60.5 kg per inhabitant, accordingly. In the studied period the highest vegetables consumption growth was noticed in 2005 (6.1%), and the highest drop in 2006 (7%).

In the years 2002 – 2007 there was a drop in the fresh vegetables consumption, from 60.7 kg to 52.2 kg per inhabitant (drop by 14%). The share of fresh vegetables in the vegetables consumption dropped from 94.1% to 86.3%. In the analysed period the consumption of almost all fresh vegetables dropped. The highest drop was noticed in relation to the following species: garden beet (drop by 24.3%), onion (17.2%), carrot (16.4%). The tomatoes consumption did not changed, and in the whole period it amounted approximately 10 kg per inhabitant. In the fresh vegetables consumption structure the share of cabbage, tomatoes, cucumbers, carrot and onion dropped from 69.6% in 2002 to 60.7% in 2007.

Table 5. Average annual consumption of vegetables and their products in Polish households (kg /capita)

Products	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Vegetable, mushrooms and their products	64,56	64,92	63,24	67,08	62,40	60,48
Fresh vegetables and mushrooms	60,72	61,08	59,64	59,16	54,12	52,2
Cabbage	8,76	8,76	8,88	8,16	7,44	7,44
Cauliflower	2,04	1,8	2,04	1,92	1,80	1,80
Tomato	10,08	10,56	10,44	10,68	10,20	9,84
Cucumber	8,40	8,16	6,96	8,18	7,92	7,08
Red beets	4,44	4,44	4,32	4,08	3,48	3,36
Carrot	8,04	8,16	8,04	8,04	6,96	6,72
Onion	6,96	6,84	6,72	6,60	6,00	5,76
Other	12,00	12,36	12,24	11,40	10,32	10,20

Source: GUS

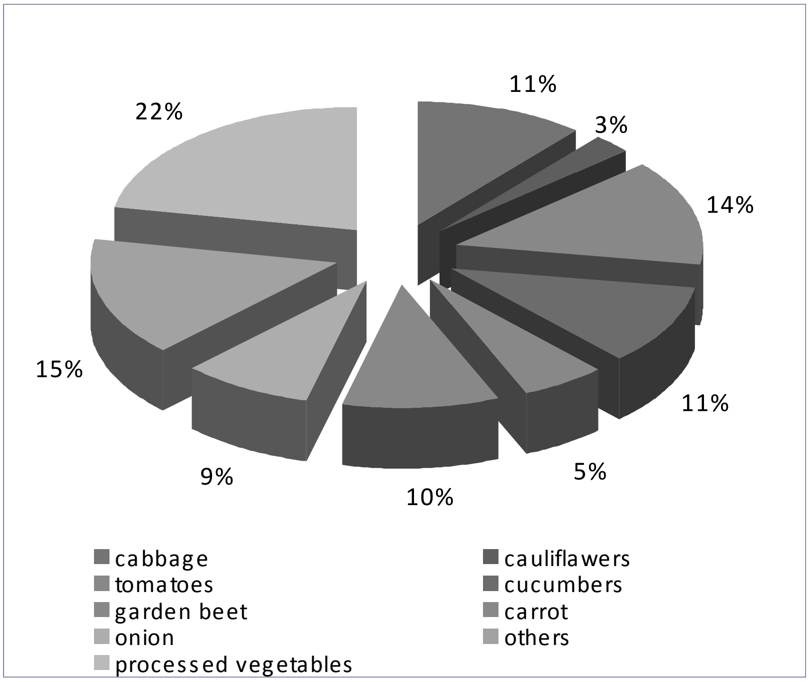

Chart 2. Structure of vegetable consumption in Poland in the years 2002-2007
Source: own calculations base on data from GUS

In the consumption structure in the years 2002 – 2007 other vegetables represented 15% (paprika, zucchini, lettuce, endive, spinach, leek, etc.), tomatoes 14%, cabbage 11%, cucumbers 11%, carrot 10%, onion 9%, beet 5%, vegetable products 22%, cauliflower and broccoli 3% (chart 2). In the years 2002 – 2007 in comparison with the previous period there was the consumption drop of cabbage, beet and carrot. There were no changes in the consumption of cucumbers, onion and products. The share of broccoli, cauliflower and other vegetables grew. It proves the small widening of the assortment of the vegetables consumed in Poland.

Table 6. Average annual consumption of vegetable processed products[2] and vegetable juices in Poland (kg/capita)

Products	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Processed products from vegetables	**14,9**	**14,7**	**15,0**	**16,5**	**18,0**	**18,5**
Frozen	2,5	2,7	2,5	3,7	5,2	6,0
Tin	3,0	3,3	3,8	4,0	3,7	3,7
Pickle	2,1	1,9	2,1	2,0	2,2	1,6
Sauerkraut	3,8	3,8	3,6	3,5	3,2	3,0
Tomato concentrate	0,4	0,4	0,4	0,6	0,7	0,7
Ketchup	1,7	1,7	1,6	1,7	2,1	2,5
Vegetable juices	**0,9**	**1,1**	**1,3**	**1,3**	**1,7**	**1,5**

Source: GUS

The vegetable products consumption in Poland in the years 2002 – 2007 grew from 14.9 to 18.5 kg per inhabitant (growth by 24%) (table 6). In the vegetable products consumption the highest consumption was noticed for the refrigerated products (growth from 2.5 to 6 kg

[2] Balance consumption: production, import, export

per inhabitant), canned vegetables (growth from 3.0 to 3.7 kg per inhabitant) and sauerkraut (consumption drop from 3.8 to 3.0 kg per inhabitant).

In years 2002 – 2007 in Poland the consumption of drinkable juices, fruit drinks and fruit – vegetable drinks has grown from 27.1 to 38.1 kg per inhabitant (growth by almost 41%). The consumption of vegetable juices increased almost twice, and reached in 2007 1.8 kg per inhabitant.

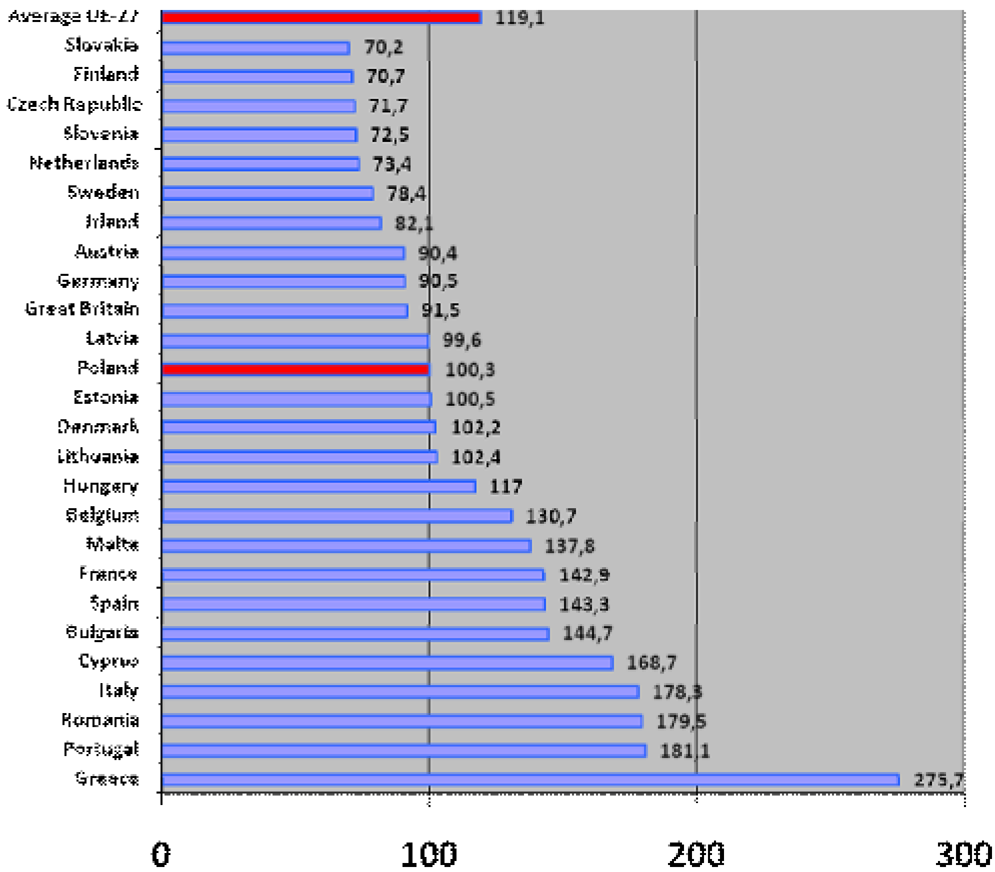

Chart 3. Consumption of vegetables and their products in the EU 27 in 2003 (kg / capita)
Source: Kwasek M., 2008: Typologia krajów UE wg. wzorców konsumpcji żywności. Wyd. IERiGŻ-PIB, Warszawa

The vegetables consumption in EU countries shows great diversification [Kwasek, 2008]. The highest consumption level in 2003[3] has been noticed in Greece – 275.5 kg per inhabitant, and the lowest in Slovakia – 70.2 kg per inhabitant, the difference between the highest and the lowest consumption amounted as much as 205.5 kg per inhabitant (chart 3). High consumption level has been also noticed in: Portugal (181.1 kg), Romania (179.5 kg), Italy (178.3) and Cyprus (168.7 kg). More than 100 kg of vegetables were consumed in: Poland, Estonia, Denmark, Lithuania, Hungary, Belgium, Malta, France, Spain and Bulgaria (from 100.3 kg in Poland to 144.7 kg in Bulgaria). In other countries the vegetables

[3] The newest data of FAO and Eurostat for the consumption in EU are for 2003.

consumption was below 100 kg per inhabitant, and below 80 kg in the following countries: Slovakia (the lowest consumption in the whole EU-27), Finland, Czech Republic, Slovenia, Netherlands and Sweden.

The vegetables consumption level in Poland accounts for 90% of the average consumption in EU-27 countries. According to FAO data, the total vegetables consumption in Poland in 2003 amounted over 100 kg per inhabitant, and Poland took the 12th place among the EU countries. In Poland prevails the consumption of cabbage and root vegetables, tomatoes and cucumbers. The consumption of cabbage, cauliflower, tomatoes, cucumbers, carrot, onion and their products (in calculation into fresh products) in Poland in the years 2000 – 2005 approximately accounted for 118% of the average consumption in EU-27. More of these products are consumed only in Greece, Romania, Italy and Belgium. Definitely higher than in other European countries is Polish consumption of cabbage (31.6 kg in comparison with 12.8 kg in EU-27), carrot (21.4 kg – 10.1 kg), onion (14.4 kg – 10.2 kg) and cauliflower (3.8 kg – 3.0 kg). On the other hand, the consumption of tomatoes and their products is lower (9.6 kg per inhabitant in comparison with 31.1 kg in EU-27 on the average), as well as most of other vegetables. The consumption of vegetable pickles in Poland is not significantly different than in EU, and the consumption of sour vegetables is higher.

3. Support for vegetable sector in EU

As a result of observations of fruit and vegetable markets functioning in the last years the European Commission decided, that valid until 2007 system regarding fruits and vegetables sector, legislated with the previously issued and the newest regulations (EC no. 2201/96 from 28.10.1996 regarding the common organization of fruit and vegetable products market, and EC no. 2202/96 from 28.10.1996 introduces the community support program for the producers of selected citrus fruit) requires changes in order to increase the competitiveness and market orientation of that sector [Walczak, 2008]. In connection with the above, the decision regarding the transformation of common organization of fruit and vegetables market since 2008 was made. The main goals and assumptions of that transformation are:

- better market orientation and higher sector competitiveness,
- limiting the fluctuations of farmers incomes,
- activities aiming at balance improvement in the fruit and vegetables selling chain (better market organization level),
- better consideration of sector diversification,
- strengthening of producers abilities in crisis management,
- decreasing of negative influence on the natural environment,
- increasing of fruit and vegetables consumption,
- assuring of coherence with WTO principles and development policy,
- increasing of predictability and control of public expenses,
- simplification of management (minimization of administrative duties) and control rationalization.

There are many detailed solutions provided in order to achieve the assumed goals. The most fundamental one is to remove support for the production addressed for processing (including the financial support system for delivering the tomatoes to the processing) and covering fruit and vegetables with the regional payments systems (decoupling). For the countries using the uniform regional payment system (SAPS) the fruit and vegetables are currently covered with the direct additional payments. The financial means, provided for the support of production for processing will be transferred to the member states as the national envelopes. In case of financial support for tomatoes the member states will be able to use the direct payments for the tomato crops during the 4-year period of transition (2008 – 2011), under the condition that the part of payments, connected with the production amount, will not exceed 50% of the national ceiling.

The stimulation of process of establishing the renowned producers organizations is another mechanism of vegetables producers support. It will consist in increasing of community support share (from 50% to 60%) in the operational funds of producers organizations in the specified cases (therewith, among others, for the new member states and countries with low market organization level, i.e. below 20% of producers organizations sale in the total production of fruit and vegetables). Moreover, it is foreseen that there will be the support limit growth for the operational fund from 4.1% to 4.6% of sold products value, under the condition of using the excess only for preventing and managing the crisis situations. In the member states where the producers organizations sell less than 15% of fruit and vegetables production, and where the fruit and vegetables production is at least 15% of their total agricultural production, it is possible to provide the national financial help for the producers up to 80% of the producers contribution. That help is additional with reference to the operational fund, and may be returned by EU at the request of the member state. At the same time there is provided the increase of support for the initially accepted fruit and vegetables producers groups for covering the costs, connected with the group establishment and administrative activities, up to 10% of sold products value in the first year of the implementation of the project for obtaining the acceptance, 10% in the second year, 8% in the third year, 6% in the fourth year, and 4% in the fifth year.

Due to the fact that the transformation includes the natural environment protection aspects, the producers organizations must allocate at least 10% of the expenses foreseen in each operational program for that purpose. Moreover, the operational program must include at least two activities connected with the environment protection. In range of the operational program of the producers organization, the EU will co-finance the ecological production up to 60%.

At the same time other support mechanisms have been provided, among others the promotion of fruit and vegetables consumption, especially among children and youth, as well as the introduction of crisis management for the producers organizations. Among others, the following tools are provided for counteracting or preventing the crisis situations on the market: removing fruit and vegetables from the market, reaping of green fruit and vegetables or reaping cancellation, informing and training activities in the crisis situations, crops insurance, support for securing the bank loans or administrative costs of creating the mutual insurance funds. The crisis management means must not be more than one third of the expenses in range of operational program. In order to finance the crisis management, the producers organization will be authorized to incur the loans on the commercial conditions. The loans capital and interest payment may be the part of the operational program, not exceeding the limit of 20% of operational program total expenses in the given year. The expenses, incurred by the producers organization for the loan payment, will be possible to be included in range of the operational program financial support.

4. Support for vegetable sector in Poland – case study

The fruits and vegetables sector differs significantly from other agricultural sectors in range and national intervention techniques within the framework allowed in EU. For that intervention comes down to supporting the producers organizations, compensations for not introducing the fresh fruit and vegetables on the market, maintaining the common quality requirements, additional payments for some fruits and vegetables for processing, export refunds and import certificates, and promotion subventions. It is, however, required to note that the support mechanisms in the individual EU countries are the same as the matter of principle. Only the amounts of national support, accompanying the EC support, are different. This document presents the main support mechanisms for the vegetable sector in Poland, before and just after the EU accession. It should be considered that the vegetable sector is always subject to the support with the fruit sector, therefore the characteristics below refer to these both sectors. The support was granted either for the producers and for the processors of fruit and vegetables.

Within Rural Development Plan for the years 2004 – 2006 the Activity 7 "Groups of agricultural producers" has been provided. Its goal is to increase the incomes of framers by the costs reduction; improvement of production quality on the market by using the common production technologies and common product preparation for the market; concentration of deliveries; better production planning and adaptation to the market needs. As the result of such activities 119 producers groups have been supported, including 27 fruit and vegetables producers groups. At the same time wide support was offered in range of Activity 8 "Technical support". With the use of means from that activity the trainings and workshops took place, study travels were organized, and studies were published in order to increase the level of knowledge of the producers and processors.

Within Sector Operational Program "Restructuring and modernization of food sector and development of rural regions 2004 – 2006" the activity "Improvement of processing and marketing of agricultural products" was implemented. 1643 applications were submitted for the co-financing of the implementation of projects in the amount of PLN 2.92 billion and 1092 contracts were signed in the amount of PLN 1.82 billion, which reached the limit of the budget. Until the end of 2006 the implementation of 433 projects has been finished – most of them referred to the meat and milk processing sectors (approximately 24% of projects each), and approximately 20% - to the fruit and vegetables processing. Implemented projects are mostly connected with: improvement and control of health conditions (26% of projects), improvement and control of quality (24%), use of new technologies (18%), improvement and rationalization of processing procedures (15%).

The best documented effects of support program influence on the fruit and vegetable sector in Poland took place in range of SAPARD program. That program preparation was based upon two identified priority axes in range of agriculture and country regions needs in the pre-accession time. It was also reflected in the division of means in range of the first axis "Improvement of agricultural and food sector efficiency". In range of that axis the considerable part of means was assigned to the investments connected with the adaptation of dairy, meat, fish and fruit and vegetable sectors to the acquis communitaire requirements.

In range of Activity 1 1778 applications were submitted, therein 1429 applications in range of Scheme 1 and 349 applications in range of Scheme 2. Until 31.12.2006 1268 projects have been implemented (they received the final payment) in the amount of PLN 1,525,052.9 thousands. Most applications, in respect of the number of finished projects (649) and the amount of paid means, were implemented in the meat sector (PLN 781,718.4 thousand), then in the dairy sector (315 applications and PLN 387,711.1 thousand), fruit and vegetables sector (223 applications and PLN 243,199.1 thousand), and in the fish sector (81 applications and PLN 112,424.2 thousand).

Most investments carried out in range of projects in Activity 1 were connected with the adaptation to the sanitary and veterinary requirements, or only sanitary in fruit and vegetables processing sector. The fruit and vegetable sector plants mostly undertook the investments connected with the increase in value added, improvement of products quality, implementing new technologies and innovations, and production costs reduction. The share of such investments in case of fruit and vegetable sector amounted to 47%, in comparison with 25% in dairy sector, 18% in fish sector and 11% in meat sector. The share of investments closely connected with limiting of negative influence on environment was low in the SAPARD program, and varied from 0.4% (fruit and vegetable sector) to 2.0% (meat sector).

In range of fruit and vegetable sector 102 plants implemented projects, where the HACCP system was implemented, and 130 implemented programs of adaptation to the sanitary and veterinary standards in EU. The quantity of production from plants, which received support in range of SAPARD, having the authorization for export to EU, amounted to 740,339 tons. In range of fruit and vegetable sector companies, who realized the investments financed from the SAPARD Program, the lowest increase of emitted pollutants has been noticed among other sectors, i.e. 0.3%.

In range of allowed in EU national support, the Agriculture Restructuring and Modernization Agency has also offered the producers and processors help in range of credits and other financial support [ARiMR, 2009]. In the analysed period the following mechanisms were implemented:

- Preferential investment credits,
- Preferential disaster credits,
- Credit warranties and securities of preferential credits payment,
- Financial support for agricultural producers groups, registered before 30.04.2004.

Another program with different character than above was the project realized by the Trade Quality Inspection of Agricultural and Food Products, co-financed by EU – Strengthening of market quality control of fruit and vegetables in Poland – being the element of multi-sector program Transition Means 2005/017-488.01.02 "Strengthening of administrative possibilities". The project was implemeted in cooperation with the Federal Ministry of Food, Agriculture and Consumer Protection and the Environment and Consumer Protection Agency in North Rhine-Westphalia in Germany. The goal of that project was to improve the trade quality control of fresh fruits and vegetables in range of consistency with the valid regulations. In range of its implementation a number of trainings were planned, including two seminars and four workshops.

Other important programs of supporting the fruit and vegetable sector are the promotional programs, co-financed by EU. Since May 2004 to the end of 2007 Poland achieved the acceptance of six promotional programs with the total budged of over € 8 million [ARR, 2009]. Two of them applied directly to the fruit and vegetable sector.

Summary

The importance of Poland in the vegetable production in EU is getting more important due to increasing crops of most vegetables. There is the production growth of vegetables, having until now lower importance in the production structure: broccoli, paprika, leaf and leguminous vegetables or sweet corn. The growth trends are not observed only for cabbage and garden beet, but it results from the stable demand for those vegetables.

In EU countries the systematic growth of vegetables production could have been observed in Italy, Spain, Netherlands and Austria. Due to the ownership transformations the production in new member states, mostly in Bulgaria, Czech Republic, Slovakia, Hungary and Lithuania has not grown.

The vegetables consumption in EU-27 countries shows great diversification. The highest consumption level in 2003 has been noticed in Greece, and the lowest in Slovakia (the difference between the highest and the lowest consumption amounted as much as 205.5 kg per inhabitant). In Poland and most of EU-27 countries the total consumption of fresh vegetables shows no growth trends. In Poland there is small growth of consumption of tomatoes, paprika, broccoli, cauliflower, cucumbers or savoy and Chinese cabbage, and the consumption drop of white cabbage and root vegetables. In Poland, likewise in the old and new EU countries, there is the consumption growth of vegetable products, mostly refrigerated vegetables.

To sum up it can be stated that the vegetable sector in Poland and in other EU countries develops significantly, which results mostly from the cyclic factors on the supply and demand sides, as well as from its strong competitive position. The sector support mechanisms are also important, mostly the EU funds. Further development of that sector will be connected with the dynamics of competitive positions changes in range of EU uniform market, as well as with changes on the global market of vegetables and their products. The basic extra-market factors, which will influence the vegetable sector in Poland and other EU countries, include the knowledge of using the sector support funds, which sine qua non condition is the ability of cooperation in range of producers groups and other forms of collective competitive advantage building.

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