Scientific Journal Warsaw University of Life Sciences – SGGW
Problems of World Agriculture volume 14 (XXIX), number 4, 2014: 205–214

Joanna Wrzesińska-Kowal[1], Katarzyna Drabarczyk[2]
Faculty of Economic Sciences,
Warsaw University of Life Sciences – SGGW

Food production in Poland, compared to selected European Union Member States

Abstract. The purpose of this paper is to characterize the food sector in Poland during 2008-2012, compared to selected European Union Member States, and to define the factors affecting growth of the sector under consideration. The structure of sold production of the Polish food industry and the levels of food production in Europe are presented in the paper. Discussion covers quantitative fluctuations in the number of businesses and production value of food products, as well as employment and salaries in the food sector. Finally, growth perspectives are determined for the studied sector.

Key words: production, food, food sector, European Union.

Overview

The food sector in Poland is among those which underwent major changes and recovered quickly after the political transformation in Poland. Thus, the sector became an essential branch of the economy, affecting economic growth. Generally, the food industry is considered resistant to crises, while business cycle fluctuations do no strongly affect demand [3].

Through technological and organizational growth, Poland has become a modern and innovative food manufacturer in Europe. This is proven by increasing exports of food products (the volume of export tripled during the last 10 years).

Another important factor that contributed to the development of this industry was Poland's accession to the European Union and the consequent opportunities for better exploration of foreign markets. With the EU membership, Polish food manufacturers were able to receive various types of grants and subsidies. Polish food products are competitive and recognized on many foreign markets.

According to the Polish Classification of Economic Activities, manufacture of food products is classified in section C - processing activities. It includes processing of products of agriculture, forestry, hunting and fishing into food and beverages[4] for human and animal consumption, as well as manufacture of semi-finished products which are not used for direct consumption.

Manufacture of food products covers a very extensive range of operations. Business undertakings engage in processing of products of animal origin (e.g. poultry processing

[1]PhD Eng., e-mail: joanna_wrzesinska@sggw.pl
[2]MSc, e-mail: katarzyna_drabarczyk@sggw.pl

[3] Food sector in Poland - Sectoral Profile, Business Information Department, Polish Information and Foreign Investment Agency (PAAIZ) 2013.

[4] Manufacture of beverages is a separate sub-section. Here it only covers manufacture of fruit and vegetable juices, non-alcoholic beverages based on milk, coffee, tea and mate.

industry), of plant origin (e.g. fruit and vegetable processing), or secondary processing (e.g. food concentrates industry). Furthermore, the food sector supplies various raw materials for the pharmaceutical industry (blood, glands), tanning industry (leather), or cosmetics industry (fat)[5].

This sector does not include preparation of meals for direct food service, e.g. in restaurants, or food distributors.

The food sector does not include producers of agricultural produce, animal breeders, fishing enterprises and fisheries.

The main characteristics of the food sector include:

1. Enormous effect on human health;
2. Stringent legal regulations defining food quality standards;
3. Requirement to comply with the sanitary and environmental standards applicable in the EU;
4. Significant barriers to entry on the food processing market (high investment outlays);
5. Competitive advantage depending mainly on the ability to adapt to the standards and requirements under the European Union legislation.

The purpose of this paper is to characterize the food processing sector in Poland during 2008-2012, compared to selected countries[6], and to define the factors affecting growth of the sector under consideration.

Structure of sold production of the Polish food industry

The food sector is essential for the food safety of the country. Due to its effects on human health, this sector is affected by extensive formal and legal requirements.

The food production requirements in Poland are mainly determined by European Union legislation. Compliance with EU laws and regulations is particularly important for food exporters, as ca. 80% of the Polish food exports reach the EU markets.

Sales structure of the Polish food sector during the studied period underwent certain minor fluctuations. The following products had the highest shares in 2012 sales: meat 28%, dairy products 15%, beverages 11%, fruit and vegetables 8% (Fig. 1).

After 2 quarters of 2014, the value of sold production of food products in Poland exceeded 94 bn PLN, corresponding to 2.6% increase as compared to the same period of the preceding year. 358.6 thousand persons were employed in this production.. Net profit of the food industry exceeded 3.2 billion PLN, corresponding to more than 10% of the net profit of industry in Poland.

In 2012, the following EU Member States were the largest buyers of Polish food: Germany, United Kingdom, Czech Republic, France, Netherlands, Italy and Slovakia (Fig. 2). Recent years have seen a prominent rise in food exports to such countries as Vietnam, Japan, Saudi Arabia, United Arab Emirates.

---

[5] Clarifications to the Polish Classification of Economic Activities – 2007. [Available at:] www.stat.gov.pl [Access: November 2014].

[6] The subjects of analysis were selected as countries that were accessing the European Union along with Poland in 2004: Cyprus, Czech Republic, Estonia, Lithuania, Latvia, Slovakia, Slovenia, Hungary. Malta is excluded due to partial lack of available data.

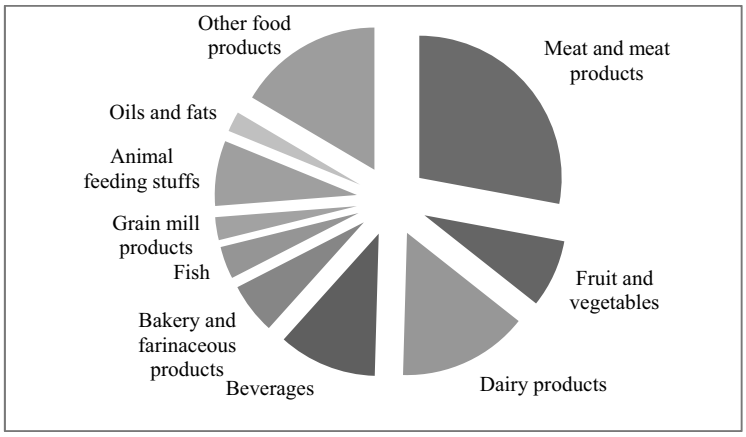

Figure 1. Polish food sector 2012 sales structure

Source: Polish Information and Foreign Investment Agency (PAAIZ) The food sector in Poland, Economic Information Department, 2013.

In terms of food production value, Poland ranks good in the perspective of the entire Community. In 2012, Poland ranked 6th across the EU.

Manufacture of food products in Europe

There are numerous publications available concerning manufacture of food products in Europe, from general reports on the condition of the entire food sector to papers relating to specific products (such as meat, dairy, fruit or vegetables). European countries specialize in manufacturing specific food products and achieve various market positions.

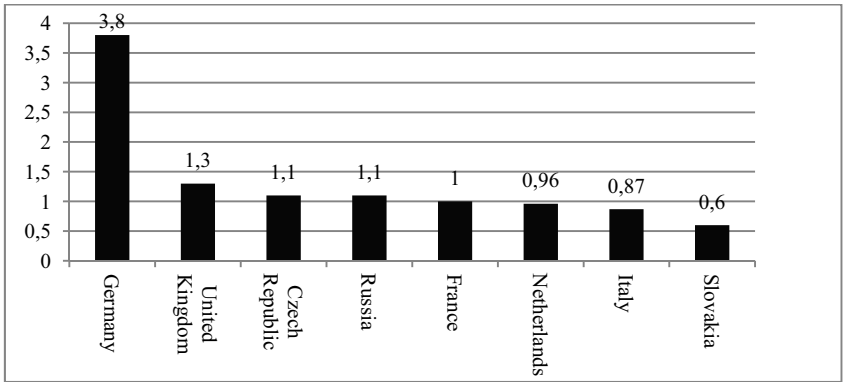

Figure 2. Main buyers of Polish agricultural and food products (value of export sales, bn EURO, 2012)

Source: own research, based on: Drewnowska B., Padł rekord eksportu polskiej żywności. [Available at:] www.ekonomia.rp.pl [Access: November 2014].

According to Datamonitor [2011], the following were the largest producers of milk in Europe in 2010: the United Kingdom, Italy, Germany and France. Their combined share in

the value of milk production in Europe exceeds 47%. They are closely followed by Poland, with production volume comparable to that of the Netherlands.

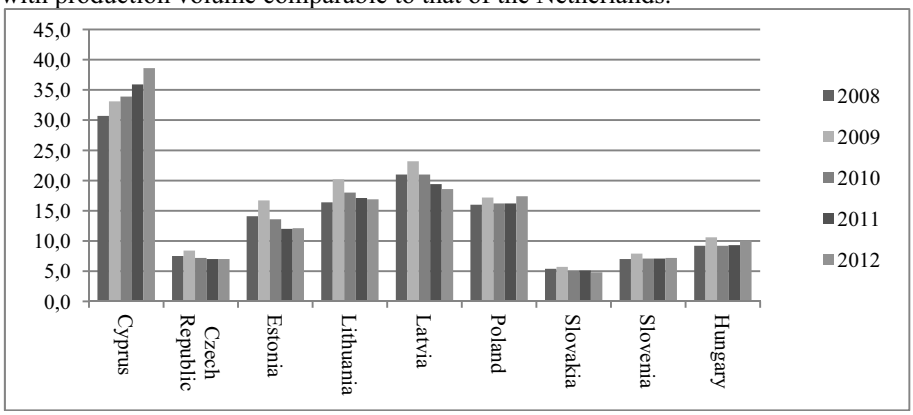

Figure 3. Percentage of food production in overall industry value (%)

Source: based on data from Eurostat database.

Krzecht and Środoń [2013] were studying production of pork in the European Union. Their research shows that the following countries were the main producers of pork during 2008-2011: Germany, Spain, France and Poland. They manufactured approx. 10-11 million tonnes of pork each year in aggregate, i.e. around 50% of the whole EU production. 2012 leaders in poultry meat production were: France, the United Kingdom, Germany and Poland, with France and the Netherlands being the largest exporters [Kozioł, Krzywoń 2014]. Poland is the most competitive poultry manufacturer in Europe in terms of prices. During 2007-2010, Germany produced the most beef, amounting to almost 1/4 of the entire EU production [Małkowski et al. 2011]. In terms of cereals production, Poland is a significant manufacturer. During 2008-2012, Poland ranked second across the European Union (following France) in terms of cereal crop areas, and third (following France and Germany) in terms of grain harvest. During 2004-2007, Italy and Spain produced over 40% of all vegetables across the European Union [Puškarić et al. 2009], but they are also the largest fruit producers in the Community. Poland is the leader in apple production. Its yield in 2009 was the highest across the EU, and in 2010 it was outstripped by Italy. Industrial animal feeding stuffs are also recognized as food products. France, Germany and Spain have been their dominant producers for years [Bodył et al. 2013]. According to Marketline report [2013], Italy, Germany and France were the leading manufacturers of baby food in 2012. M. Zuba pointed out in her research that Germany was the largest manufacturer of eco-foods in Europe in 2008, with Italy being the largest exporter of these products. They are continuously among the leaders in this field today.

Quantitative fluctuations in the number of businesses and production value of food products

Cyprus is characterized by the highest proportion of food in the value of overall industry volume among all the studied countries, at 31-39%. Another distinguished country in this perspective is Latvia, showing a decreasing tendency (from 21 to 18.6%). Poland

ranks third on this list. During the studied period, the percentage of food production ranged from 16% to 18% of the full value of the industry (Fig. 3).

During the years of study, Poland manufactured food products with the highest value (Table 1). In 2009, production value decreased in all the studied countries, followed by increases during the next two years. Increase was most prominent in 2011 in Lithuania (over 20%), and decrease was strongest in Latvia in 2009 (over 20%). In 2012, Lithuania and Poland reported the highest growth of production value as against the value of 2008 (by over 16%), and the same value decreased in the Czech Republic and Slovenia at the same time.

Table 1. Value of food production in million EUR

Country	2008	2009	2010	2011	2012
CY- Cyprus	1,125.0	1,100.3	1,155.8	1,169.5	1,139.6
CZ - Czech Republic	10,353.8	9,020.8	9,133.2	9,876.0	9,827.6
EE- Estonia	1,105.1	953.0	1,005.6	1,138.7	1,180.2
HU- Hungary	8,023.9	6,954.5	7,045.1	7,892.6	8,311.4
LT- Lithuania	2,721.1	2,311.4	2,539.0	3,074.0	3,163.6
LV- Latvia	1,411.0	1,109.2	1,200.7	1,313.0	1,433.2
PL- Poland	36,596.2	30,678.0	34,499.1	38,689.0	42,516.0
SK - Slovakia	2,728.1	2,281.0	2,537.7	2,905.9	2,911.3
SI- Slovenia	1,637.2	1,461.6	1,485.0	1,569.8	1,548.3

Source: own research, based on data from Eurostat database.

In the countries under review, over 80% production value would be generated by business establishments employing over 50 persons. During 2008-2012, the highest value proportion of food against total processing was recorded in Cyprus (34% on average) and the lowest in Slovakia (5% on average). This ratio is around 16% in Poland.

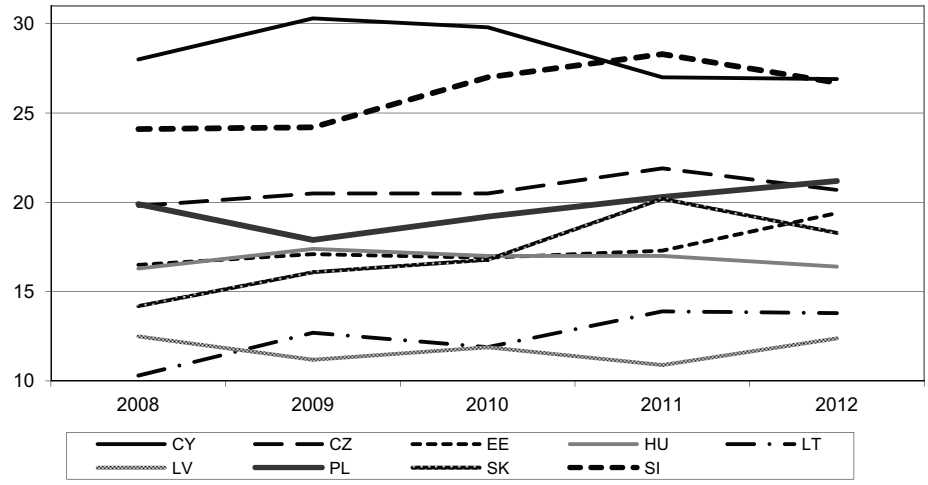

Figure 4. Gross Value Added per 1 employee, in thousand EUR
Source: own research, based on data from Eurostat database.

The most commonly applied labour productivity measure is the Gross Value Added (GVA) and its modification - Gross Value Added per employee. Employees were most productive in Cyprus and Slovenia (Fig. 4). The worst situation in this perspective was

observed in Lithuania. Productivity of Polish employees ranged above average for the studied counties, and the percentage of added value of food products in total added value of the processing sector is nearly 15%.

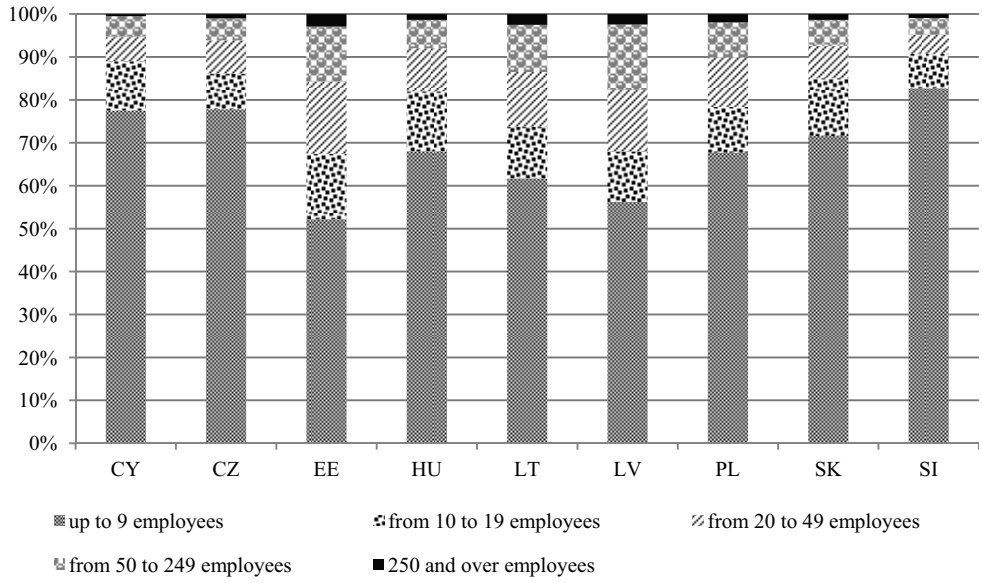

Figure 5. Average yearly number of enterprises during 2008-2012,
Source: own research, based on data from Eurostat database.

Micro-enterprises strongly prevailed within the overall group of food product manufacturers in each of the studied countries, while the number of large enterprises was negligible (Fig. 5). Micro-enterprises represented almost 80% of all businesses in Cyprus, while their production value represented less than 15% of the value of the entire processing sector. In addition, this percentage slightly exceeded 5% in Poland and in Slovenia and remained even lower in the remaining countries. Large number of enterprises did not correspond to higher productivity. The highest growth (including 80% of micro-enterprises) was observed in Slovakia where the overall number of business operators quadrupled during the period of study. Only in Poland and in Cyprus would the number of enterprises decrease in 2012 as against the value of 2008.

Employment and salaries in the food sector

Most people were employed in Poland in manufacture of food products during 2008-2012 (Table 2). Least employees worked in this field of manufacture in Cyprus; however, their proportion in overall employment in the processing industry was highest, exceeding 30% during each of the years of study, which is due to poor development of other branches of industry in this country. In Slovakia, the average number of employees per 1 enterprise was highest (for 2008 and 2009). A very significant increase in the number of micro-enterprises was recorded there in 2010 (by 1816 businesses), resulting in a strong

narrowing of this category. 29 persons were employed per enterprise in Poland during 2008-2012 on average. During the years of study, the number of employees dropped in all countries except Cyprus. This is an alarming phenomenon. People lose their jobs as a consequence of increasing automation of production. Regular annual drops of the average numbers of employees per enterprise were observed in: the Czech Republic, Estonia, Lithuania and Slovenia.

Table 2. Average employment in manufacture of food products

Country	Average number of employees per 1 enterprise				
	2008	2009	2010	2011	2012
CY	12.3	12.5	14.2	14.5	14.0
CZ	19.3	17.4	15.8	14.1	13.8
EE	37.8	34.6	34.5	33.0	31.4
HU	22.3	21.4	20.7	20.0	20.2
LT	38.3	37.2	34.9	32.0	28.2
LV	40.8	35.6	31.5	31.6	28.3
PL	26.7	29.4	29.1	29.3	28.4
SK	51.2	46.4	14.3	13.9	14.5
SI	16.4	14.9	13.6	12.2	11.4

Source: own research, based on data from Eurostat database.

According to the research, during the study period Cyprus and Slovenia were the countries in which employees could count on earning the highest wages and salaries. They were almost three times higher than in Lithuania where earnings were lowest. Lithuania is also the only country in which salaries and wages in 2012 lowered as against the value of 2008; wages and salaries increased elsewhere. Average nominal salary in the food sector in the European Union was above 3,000 Euro during the years of study (Fig. 6).

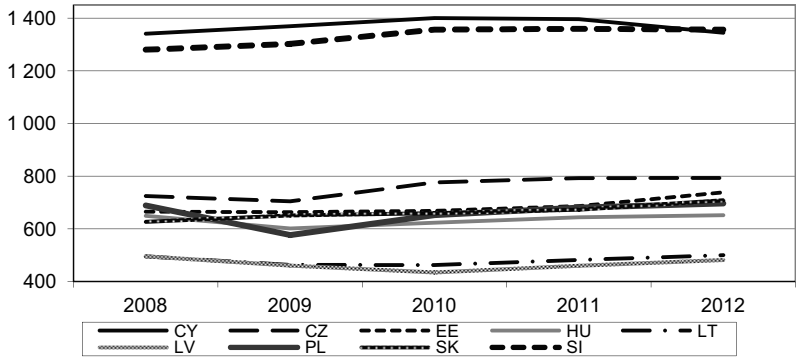

Figure 6. Average monthly salary during 2008-2012, Euro
Source: own research, based on data from Eurostat database.

Employers from Latvia, Poland, Lithuania and Hungary were paying the lowest social security premiums, which were highest in the Czech Republic and Estonia. In four of the countries, average cost of employing a single worker did not exceed 10,000 Euro, and these are the most competitive countries in terms of costs. Cyprus and Slovenia are the countries

where these costs are highest, despite the lowest percentage of social security paid by employers (Fig. 7).

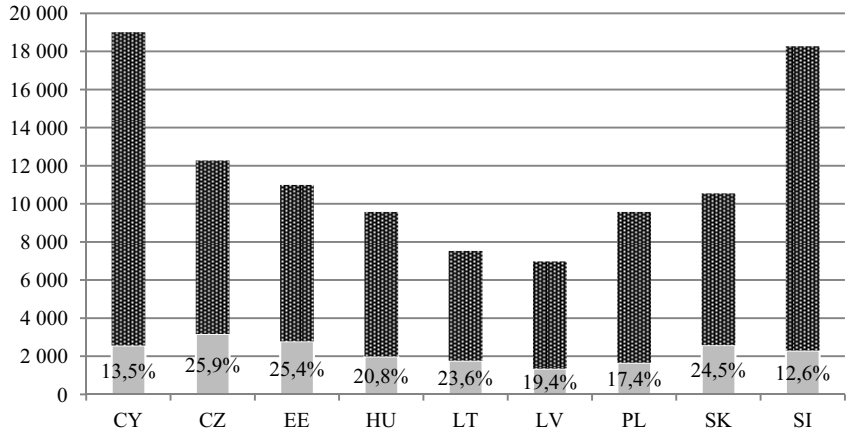

Figure 7. Average annual cost of employment per 1 employee during 2008-2012, Euro, and social insurance contributions (paid by the employer), %

Source: own research, based on data from Eurostat database.

Food industry growth perspectives

Poland is among the largest beneficiaries of EU funds. Accession to the EU involved the need for enterprises to adapt to the standards applicable in the EU. With these funds, many food producers were able to survive and expand. The Polish food industry is competitive against other EU Member States due to the prices of agricultural produce and relative low processing costs [Szwacka-Mokrzycka, Kociszewski 2011]. Low labour costs further encourage investments in the food sector. Investments in new technologies to enhance productivity are necessary to maintain the competitive advantage. Retaining and acquiring new sales markets is possible through such activities as: strengthening the brands of Polish foods and creating its positive image as healthy, high quality products manufactured in compliance with stringent sanitary standards. Consumers' interest in food manufactured with the use of industrial methods has been decreasing for years. Chemical plant production products or genetic modifications used in production make consumers reluctant to buy. According to the analysis carried out within the project entitled "Food and diet in the 21st century - a vision for growth of the Polish food sector", demand for eco-foods and pro-health foods will be increasing rapidly on the global markets during the upcoming ten or more years. Poland is already taking advantage of this development direction - both the number of eco-farms and the areas of such crops are increasing year by year. During the upcoming year, demand for design foods adapted to the needs of specific consumer groups (e.g. obese people, diabetics, people with gluten intolerance) will be

increasing as well [Michalczuk 2013]. These directions should be taken into account by Polish manufacturers.

During the upcoming years, exports to EU Member States will foster growth of the food industry. On the other hand, increased exports of food to Asian markets and Balkan states is expected to compensate for the losses incurred by Polish producers as a consequence of the embargo imposed by Russia.

Summary

1. In terms of food production value, Poland held a very distinctive position in the perspective of the entire Community. This value would be 4 to 34 times higher than the production values in the remaining countries under review on average.
2. Employees were most productive in Cyprus and Slovenia. The level of employee productivity was higher in Poland than the average productivity in the studied countries.
3. In all the countries of study, micro-enterprises prevailed in the overall number of business establishments, but enterprises with 50 or more employees produced over 80% of total production value.
4. Employment in manufacture of food products was the highest in Poland. Fewest employees were working in Cyprus, but this is the only country where the number of employees increased in the perspective of the studied years.
5. In all the studied countries, salaries earned in food production were lower than the average salary in the European Union. During the period of study, employee salaries decreased in Lithuania only.
6. Poland is among the most competitive countries in terms of cost of employment per 1 employee, which is an encouragement for investment in the food sector.
7. Investment in new technologies to enhance efficiency is an opportunity for growth of businesses; it is possible with the extensive EU aid received by the Polish food manufacturers. The increase in eco-production appears as a response to increasing health awareness among consumers, and this direction should be specifically taken into account.

References

Bodył M., Krzemiński M., Łopaciuk W. [2013]: *Sytuacja na światowych rynkach surowców paszowych i pasz przemysłowych*. Rynek pasz, stan i perspektywy nr 34, 6-16.

Czeczot H., Ścibor D. [2011]: *Aktualny i przewidywany stan rynku wołowiny.* Rynek mięsa stan i perspektywy nr 40, 5-17.

Datamonitor [2011]: Milk in Europe.

Global Agricultural Information on Network 2011. EU-27 Fresh Deciduons Fruit Anual Good Prospects for EU-27 Apple and Pear Production.

Kozioł I., Krzywoń M. [2014]: Stan przemysłu drobiarskiego w Polsce. Progress in Economic Siences nr 1, 86-98.

Krzecht D., Środoń S. [2013]: *Sytuacja wybranych elementów sektora produkcji mięsa wieprzowego w Polsce na tle najważniejszych producentów w Unii Europejskiej*. Journal of Agribusiness and Rural Development No 1, 119-131.

Marketline Industry Profile: Baby Food in Europe 2013.

Michalczuk L. [2013]: *Perspektywy rozwoju polskiego przemysłu spożywczego w świetle badań foresightowych*. Innowacyjne Mleczarstwo nr 1, 32-36.

Puškarić A., Jeločnik M., Ivanovič L. [2009]: *Analysis of Vegetable Production in the European Union with Retrospection on the Conditious in Republica of Serbia*. Universităţii Petrol – Gaze din Ploieşti vol LXI No 3/2009, 36-43.

Rynek zbóż w Polsce. Report of the Agricultural Market Agency (ARR). [Available at:] www.arr.gov.pl [access: November 2014].

Sektor spożywczy w Polsce. Business Information Department, Polish Information and Foreign Investment Agency (PAAIZ) 2013.

Szwacka-Mokrzycka J., Kociszewski M. [2011]: *Uwarunkowania rozwoju przemysłu spożywczego po przystąpieniu Polski do UE*. ZN SGGW Problemy Rolnictwa Światowego t. 11 (26), z. 2, 67-77.

Trajer M., Dyngus M. [2013]: *Krajowa produkcja, spożycie oraz promocja owoców i warzyw*. Biuletyn Informacyjny Agencji Rynku Rolnego nr 3, 14-25.

Zuba M. [2011]: *Szanse i bariery w integracji łańcucha żywności ekologicznej w Polsce*. ZN WSEI, seria Ekonomia nr 3, 261-288.