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Warsaw Agricultural University

Problems of world agriculture Volume XIV

POLISH AGRICULTURE AND FOOD ECONOMY WITHIN THE EU FRAMEWORK

Warsaw Agricultural University Press
Warsaw 2006

Reviewers:
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Stanisław Stańko

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Publication subsidised by the Ministry of Agriculture and Rural Development

Editor: Henryk Manteuffel Szoege

ISBN 83-7244-778-0

Warsaw Agricultural University Press
166 Nowoursynowska St., 02-787 Warsaw
phone (+48 22) 593 55 20, e-mail: wydawnictwo@sggw.pl
www.wydawnictwosggw.pl

Printed by Agencja Reklamowo-Wydawnicza A. Grzegorczyk, www.grzeg.com.pl

Preface

This volume of ‘Problems of World Agriculture’ presents a set of reviewed papers in English contributed to an international conference ‘Polish agriculture and food economy within the EU framework’ organised by the Chair of Agricultural Economics and the International Economic Relations in the Warsaw Agricultural University. The aim of the conference was to investigate the current economic and social problems in Polish agriculture and food economy on the background of similar problems in the neighbouring countries as well as wider in the perspective of the international economic relations. This is particularly related to the recent Polish accession to the European Union.

Henryk Manteuffel Szoege

Piotr Bórawski[1]
Chair of Agribusiness and Environmental Economics
Department of Environmental Management and Agriculture
University of Warmia and Mazury

FOOD SAFETY IN POLAND IN THE ASPECT OF EUROPEAN UNION INTEGRATION

Abstract. Food safety and quality are main issues in food economics. The first part of this paper deals with food quality in Poland before and after the process of integration with the EU. The conducted analysis have confirmed the improvement of Polish food quality. The sanitary conditions of Polish processing plants have also improved. But the concentration of nitrates is still very high in some vegetable products. The second part contains an analysis of the Polish exports and imports and their changes in the economic transition process. Wheat imports were higher than exports. In addition to this, the survey proved that Poland is self-sufficient in food production and food safety has improved in the transition period.
Key words: food safety, food quality, export, import, free market economy

The European Union has introduced food safety reforms which seek to regulate the production and consumption of high quality food. Since May 2004 Poland has been a member of the European Union and has had to obey the EU rules. The first objective of food policy reforms is to ensure food safety, what means enabling people to have sufficient food to lead healthy and active lives. This can be achieved when countries produce enough food domestically or import it. On the other hand, when the food is imported, domestic producers have problems with selling their own production and their incomes are not stable.

Food safety has an influence on how food is produced, processed, distributed and recycled. Food safety regulations are decisions that affect agricultural markets. The processes are particularly visible in countries which were in an integration process with the European Union markets.

Food safety is a very important issue, particularly in the developing countries and the new members of the EU because the rules must be introduced and obeyed in a very short period of time. Polish consumers now demand food with the same high standards as all EU citizens, whether the food is imported or produced domestically. Grunert [2005] says that consumers are more demanding and more critical, because they need high quality products in order to satisfy them. Zeithaml [1998] confirms this process and adds that consumers only buy products which have quality and safety attributes and are value for spending money. In Poland very important changes in food policy have been announced to all marketing food chain members. Farmers, for instance, are obliged to produce healthy food. This concerns

[1] PhD, address: 10-957 Olsztyn-Kortowo, Plac Łódzki 2, Poland, email: pboraw@moskit.uwm.edu.pl
The paper is based on a research conducted within the research Project No 3P06 R 064 25, financed by National Committee for Scientific Research (KBN), Poland

healthy animals and the prevention of contagious animal diseases, for example bird flu or swine fever. Producers and processing plants also have to follow rules set up within the CAP. Food must be healthy, safe and customers must be fully informed about the products. The producers and food processing idustry who do no follow the rules can only sell their products on local markets and the EU markets are closed for them.

Aim and method of analysis

The aim of the study was to present food safety in Poland in European Union integration aspect. The food safety was discussed on the basis of materials available within the Common Agricultural Policy. Moreover, the data were obtained from the Central Statistical Office (GUS) and from the Ministry of Health. The data for milk procurement outlets and dairies were obtained from the Ministry of Agriculture and Rural Development. Data about the average cesium-137 concentration in some food products came from tge National Atomic Energy Agency. The paper contains data from 1992 up to 2004. It includes information about the food quality, safety and an import and export analysis.

Food policy in the economic transition process in Poland

The process of transition from a command and control economy to a free market economy in Poland started in 1991. The communist system favored the decisive role of government and the system was characterized by a constant lack of agricultural commodities.

The market economy, on the other hand, prefers private ownership, freedom of choice and private business. But some sectors, for instance agriculture, were not able to manage to adjust to the new situation. The Polish government offered some help by setting minimum prices to help farmers through guaranteed incomes. Moreover, the government offered some credits and loans for young farmers to modernize their farms. The membership of Poland in the European Union requires following a comprehensive food strategy with modern food and hygiene standards on all farms. The first step involves tagging animals to help trace food, diseases and food problems from the farm which is a crucial element in minimizing risk and informing consumers about producers. The European Union allows for diversity. It means that in addition to traditional food, the European Union countries can produce local specialties and promote organic farming. Moreover, the European Union has established a transition period for Poland and other countries (Czech Republic, Latvia, Lithuania, Hungary and Slovakia) because these countries did not complete upgrading, particularly for plants and meat

processing[2]. If these countries do not complete these adjustment processes by December 2007, their commodities can only be sold in the local markets without the possibility of export because the products will be labeled with information that "this product does not comply with EU standards".

Healthy animals and genetically modified organisms

Polish food safety also concerns animal health. Animals should be provided with good veterinary care to prevent disease. Food hygiene is treated as a priority and farmers who do not conform to hygiene regulations can only sell their commodities on the national markets. Animals are also accompanied by a passport which helps to identify the parentage of the animals. They cannot be treated badly because it results in poorer food quality. It is essential to maintain the animal health without a physical stress and transport or slaughter conditions should be updated to meet the consumer and EU expectations. Hobbs and Kerr [2006] say that chemical residues in fruits and vegetables, drug residues in meat, growth enhancing hormones used in animal production and use of children labour are the priority concerns of consumers in many countries.

Other important issues in food safety are genetically modified organisms, animal health, animal welfare and plant health. These aspects are particularly essential because careful knowledge of these processes helps to identify potentially dangerous contamination, which can lead to food poisoning. If a product contains some genetically modified material and its quantity is below a very low minimum threshold content it must be stated on the label. The aim of food labeling is to provide the consumer with information about product ingredients, manufacture, animal age, rearing, slaughtering or cut, storage methods, preparation, food allergies or food intolerance. Nowadays consumers pay attention to healthy eating, good nutrition and obesity. Information provided on products helps consumers to make informed decisions and help to eliminate food allergy reactions. Fulponi [2006] suggests that consumer loyalty is built by investments in quality or in quality control mechanism, which help to increase the firm's reputation.

Food quality in Poland in the EU integration aspect

Food safety also concerns about food quality. Production payments encouraged farmers to produce more effectively and intensively using chemical fertilizers and exploiting natural environment methods. Over time, this policy changed and now farmers are encouraged to produce less, but the food quality must be better. Direct subsidies support

[2] http://europa.eu.int/comm/agriculture/index-en.htm

farmers' incomes and help them to cover necessary costs to maintain hygienic standards, improve sustainable development, animal welfare and production, food safety and environmental protection. All these and other food policies have resulted in commodity prices and their unforeseen changes.

Table 1. Sanitary evaluation of some food industry establishments in the scope of food and nourishment hygiene (plants in poor sanitary condition as % of controlled plants in %)

Food processing or serving establishment	Years						
	1995	1996	2000	2001	2002	2003	2004
Milk procurement outlets	22,5	25,8	24,6	16,5	16,5	16,2	14,2
Dairies	8,3	7,4	16,6	20,7	25,8	26,4	38,5
Bakeries	15,3	13,1	17,5	16,0	14,6	15,2	12,6
Confectioneries	13,8	12,7	15,2	13,9	13,6	12,9	10,7
Fruit-vegetable and mushroom processing plants	9,0	8,5	16,2	14,7	13,2	10,1	7,9
Semi-finished food plants	10,5	9,9	21,1	20,7	21,5	20,8	14,0
Cereal-mill plants	21,3	19,0	33,3	24,8	24,8	20,7	14,6
Food concentrate plants	4,4	2,6	23,5	18,4	26,6	15,0	10,5
Groceries	41,4	40,4	18,3	15,5	13,1	10,0	8,7
Restaurants, bars and canteens open to public	20,9	20,3	15,4	14,4	12,8	10,6	9,1
Restaurants, bars and canteens with restricted admission	21,2	20,6	17,4	16,2	15,5	13,9	13,8
Market places	20,2	20,0	34,5	33,4	29,0	26,8	25,3

Source: own calculations on the basis of Central Statistical Office data 1995-2004, Ministry of Health, Ministry of Agriculture and Rural Development

Moreover, the plants sanitary conditions have improved as the results of adjustment to EU standards. During the period 1995-2004 the sanitary evaluation of some catering establishments in scope of food and nourishment hygiene have generally improved (tab. 1). The percentage of poor condition controlled plants have decreased. Only in dairies and semi-finished food plants the percentage of poor condition plants is still very high. These results will probably be changed because dairies must be adjusted to European Union quality standards. The small dairies which do not process milk, only buy milk directly from farmers, will be probably closed.

Food safety also concerns about food quality. Carr [2006] focuses on food security and its roots in the 1970s - era global-scale concern for food supplies. Previous issues concerned about famine and the possibilities to trade, technology and food aid adjustments. Food safety means eliminating the risk of contaminated food. In the EU food can be traced from producer to customer and the meat processing enterprises should identify their supplier. These rules will help to keep food safe and to monitor what the food contains. A very important issue is to identify farm animal feed to protect consumer and animal health. Using terreostatic or beta-antagonist substances, hormones and pesticides from veterinary medicines or contaminated food containers is forbidden.

The sanitary evaluation of some domestic foodstuffs is rather optimistic for Poland (table 2). Over the years 1995-2004 the percentage of disqualified samples in surveyed samples of domestic foodstuffs generally decreased. It means, that the quality of food in Poland has improved as the results of EU adjustment process.

Table 2. Sanitary evaluation of some domestic foodstuffs (disqualified samples in % of surveyed samples)

Food product	Years (lata)						
	1995	1996	2000	2001	2002	2003	2004
Liquid milk	24,0	21,4	14,6	13,8	12,4	16,2	10,9
Butter	25,3	24,8	23,2	19,7	18,0	18,5	13,5
Meat excluding canned meat	-	8,2	7,8	6,4	5,8	5,5	3,2
Fish and processed fish excluding canned fish	13,3	12,6	16,0	13,2	14,2	7,9	3,8
Vegetable fats	3,3	3,6	3,2	3,2	2,5	2,8	0,9
Animal fats	11,8	13,4	10,7	15,9	9,2	5,2	3,7
Semi-finished food products	20,1	20,3	24,2	20,5	13,2	11,7	7,0
Fruit, vegetables, mushrooms and preserves	8,4	8,2	11,0	9,3	10,8	5,4	3,3
Bread including dry bread	7,1	7,7	8,7	8,5	8,7	6,0	6,3
Non-alcoholic beverages	18,4	17,8	13,1	10,7	9,0	7,8	3,3

Source: own calculations on the basis of Central Statistical Office data 1995-2004, Ministry of Health, Ministry of Agriculture and Rural Development

Another important issue of food quality is the concentration of harmful roots in food. Ritson and Mai [1998] describe food safety as a process which is opposite to food risk. It means that the strategy concerning food safety must eliminate all dangerous components of food. One of the most dangerous is caesium –137 concentration as it has bad influence on human health. The collected information has confirmed that the caesium 137 concentration has decreased in meat, eggs, fish and poultry in the years 1995-2004 (table 3). But the concentration of caesium 137 in plant production has not decreased. It means that special actions to eliminate the concentration of caesium 137 in plant production must be taken in close future. This and other harmful substances should be eliminated from plant products.

Table 3 Average annual caesium-137 concentration in some food products (in Bq/kg)

Year	Meat	Poultry	Fish	Eggs	Potatoes	Vegetables	Fruit	Cereals
1995	2,0	0,8	2,7	0,6	0,6	0,5	0,5	0,3
1996	2,5	0,9	2,4	0,7	0,6	0,5	0,5	0,2
1997	1,9	0,8	1,7	0,7	0,6	0,5	0,5	0,2
1998	2,3	0,7	1,0	0,7	0,6	0,6	0,5	0,2
1999	2,3	0,9	1,4	0,6	0,6	0,6	0,5	0,1
2000	2,6	0,8	1,8	0,7	0,6	0,6	0,5	0,1
2001	1,9	0,9	1,3	0,7	0,7	0,7	0,5	0,2
2002	1,7	1,1	1,7	1,0	0,8	0,5	0,5	0,2
2003	1,7	0,8	1,8	0,7	0,6	0,7	0,5	0,2
2004	1,2	0,7	1,3	0,7	0,8	0,6	0,5	0,3

Source: own calculations on the basis of Central Statistical Office data 1995-2004 and the National Atomic Energy Agency

Food quality is a crucial strategy in food markets. International supply chains can function when the food standards are established. Quality standards are used by buyers and sellers as a useful tool in quality perception and control. Nowadays, food standards are established for most of agriculture products: potatoes, meat, eggs, vegetables and other. Most

world trade organisations use these standards and mainly governments, industry, exporters and other. Food quality standards can improve consumer's information about product quality in world and enterprises must inform consumers about products to solve the information problem [Fulponi 2006]. Each country has its own standards, but most of them are becoming global standards in food system across the world. International standards help in goods' distribution in the world and reduces the risk of consumers' poisoning and allergy.

Food quality strategy includes the increase of consumer awareness. Official food quality control system in the EU is based on the principle of product quality assurance. Producers are responsible for product quality at all stages of production by implementing internal control system to guarantee high quality product. Quality assurance process is supported by state institutions which are element of the external control system. Their aim is to protect consumers health.[3]

Nowadays concerns have been rising among consumers in many countries regarding the attributes of goods. These concerns include mainly chemical residues on fruit and vegetables [Hobbs & Kerr 2006]. Food safety concerns the concentration of nitrates in vegetables. This substances are particularly harmful to human health because they may cause serious diseases such as cancer. The information in table 4 have proved that the highest number of samples with exceeding concentration of nitrates was detected in red beet (46,5%), radish (52,7%), cauliflower (41,0%) and celery (34,1%). On the other hand, the lowest concentration of nitrates have been observed in: tomatoes 90,0%), cucumbers (0,5%), lettuce (7,9%). These results have confirmed that Polish agriculture needs implementing more organic methods of farming.

Table 4. Contents of nitrates in vegetables and in potatoes sampled in 2003

Vegetable	Contents of nitrates (mg/kg of fresh substance)		Samples exceeding the standard	
	HPC[1]	Average	No of cases	%
Carrots	474	221,9	71	15,0
Parsley – root	201	470,8	70	34,8
Cucumbers	420	98,6	2	0,5
Cauliflower	78	359,1	32	41,0
Celery	129	415,1	44	34,1
Tomatoes	182	19,6	-	0,0
Potatoes	528	153,1	128	24,2
Lettuce	101	1227,9	8	7,9
Radish	74	1775,4	39	52,7
Red beet	301	1727,6	140	46,5
Spinach	15	1380,6	3	20,0
White cabbage	362	631,5	95	26,2

[3] Agriculture and Food Quality Inspection in Poland

[1] The Highest Permissible Contents according to an ordinance of the Ministry of Environment (Journal of Laws 2002 No. 165, item 1359)
Source: own calculations on the basis of Central Statistical Office data for 2004 and Ministry of Agriculture and Rural Development

Export and import analysis

Export and import analysis of chosen commodities also provides interesting data about food safety and food production. Since 1992 the balance of wheat exports and imports was disadvantageous for Poland in the transition period. Only in 1998, 2002 and 2004 was the balance of wheat exports advantageous for Poland (table 5). During the analyzed 15 years, both Polish dependence on wheat imports and domestic wheat demand have declined (since 1998). The government should focus attention on the wheat market to eliminate stress and wheat production insecurity because the import and export variability appears to be significant in price volatility.

The situation of beef balance in Poland in the transition period looked much better. Until 1993 the balance was detrimental. Since 1994 the balance of beef exports and imports has been positive. A particular increase in positive export and import beef balance has been visible since 2004. It is also an effect of a decline in domestic use. Similar results were obtained from pork export and import balance. Since 1995 the balance is positive for Poland. The presented data in table 4 suggests that Poland is self-sufficient in agricultural production. Only wheat policy needs more stabilization actions. Higher food supplies can be the effect of production increases and it will improve food security [Christon 2000].

Table 5. Export and import of analyzed commodities (thousand tons)

Specification	Year												
	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05
Wheat													
Initial stock	1092	281	630	481	918	2514	1716	1583	1165	1067	1334	640	268
Harvest	7368	8243	7659	8668	8578	8193	9537	9051	8503	9283	9304	7858	9892
Import	614	500	785	1002	2188	568	497	287	912	351	149	203	220
Total supply	9074	9023	9075	10151	11680	11274	11750	10882	10580	10721	10788	8701	10380
Domestic use	8766	8360	8523	9010	8950	3950	9675	9618	9419	9307	8998	8355	8297
Export	27	33	71	223	206	208	512	98	74	80	1150	78	300
Export-import	-587	-467	-714	-779	-1982	-360	15	-189	-838	-271	1001	-125	80
Beef													
Output	785	717	716	745	771	805	710	635	562	522	591	611	555
Import	50	42	16	42	24.6	8.7	0.4	2.0	0.00	3.7	5.2	3.7	5.0
Export	37	41	40	48	49	64.4	67.4	57.6	57.4	107.8	92.5	117	136
Export-import	-13	-1	24	6	24.4	55.7	67	55.6	57.4	104.1	87.3	113.3	131
Pork													
Output	2532	2226	2575	2657	2430	2601	2675	2500	2419	2600	2832	2538	2500
Import	55	115	60	49	48.5	49.6	76.6	52.9	41.3	58.7	58.6	124	112
Export	20	20	33	50	154	220	152	144	87.6	86.7	251	209	176
Export-import	-35	-95	-27	1	105.5	170.4	75.4	91.1	46.3	28	192.4	85	64

Source: own calculations on the basis of Central Statistical Office data for years 1992-2005 and Ministry of Agriculture and Rural Development

However, Poland is not making progress in improving food security, particularly in crops. Beef production security is worse than 15 years ago because production has decreased from 944,000 tons in 1991 to 555,000 tons in 2005. Polish agricultural production has slowed and output has stagnated and fluctuated widely in the transition period. However, food production is sufficient for Poland because exports have increased. In many other countries agriculture is not developing well and poverty and food insecurity are major problems [Alexandratos 1999].

Conclusions

This paper has explored the issue of food safety in Poland during the integration process. The conducted analysis have confirmed that Poland has improved food safety, what was the result of the European Union adjusted processes. The quality of food has improved. The percentage of disqualified samples in surveyed samples of all analysed commodities has decreased. This process is particularly visible in milk, meat and non-alcoholic beverages analysis. Moreover, the concentration of caesium 137 has decreased in food products.

The European Union integration has forced Polish food processing plants to improve their sanitary conditions. All processing plants, except small dairies, have improved their sanitary standards. These improvements have resulted in better food safety in Poland.

The analysis has shown that the import of wheat has played an important role in Poland. The process started in 1992 and is still ongoing. Increased reliance on European Union imports may increase domestic price volatility. This may lead to profitability crisis for producers and national food insecurity. This market needs policies to reduce price volatility and to ensure a continuous supply of wheat for domestic use. Countries which import more than they export are concerned about price volatility on the international markets. Interestingly, the export of beef and pork helped to improve the financial situation of farmers and the balance was rather profitable for Poland.

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Ivan Darashkevich[1]
Grodno State Agricultural University, Belarus

THE DEVELOPMENT OF REGIONAL HERBAL MARKET

Abstract. The process of EU integration faces a lot of possibilities for pre-border companies to develop new business relations. There is an opportunity to develop a cluster of herbal product companies which operate across Bielowieza Savage forest. The development of regional herbal market could positively influence the sale strategy in Belarus and Poland by marketing activities coordination.

Key words: herbal market, EU, Belarus, rural development

Introduction

The enlargement of European Union to the Eastern borders of Poland brings along many positive factors to Polish business. On the one hand the process of integration provides companies with new possibilities and market perspectives. On the other hand there are a few spheres of business where the advantages of EU enlargement could not be so obvious. Anyway the advantages of EU enlargement are used by pre-border companies from Poland and Belarus, which is a country with illusive perspectives to join the EU in the near future. The objects of our investigation were Polish and Belarussian companies which are involved in the herbal market and raw herbals external trade.

"Runo" Sp. z o.o. is one of biggest Polish forage companies located in Hajnowka, less than 20 km to the Belarus border. The annual turnover of the company is more than 1300 tons of dried botanicals, with a half presented to export [Biegluk 1999]. The general forager area for botanicals is a territory of Bialowieza Savage Forest.

The company has developed a network of 20 forage centers which could purchase even a few grams of botanicals from people in the countryside. The main part of the firm in Hajnowka processes the collected herbs, stores and sells raw herbs to the customers over the country and abroad. One of the external trade partners is "Biotest" NPK from Belarus.

Pharmaceutical company "Biotest" NPK located in Grodno, 15 km from Polish border. This company is the largest herb medicines producer in Belarus with an annual turnover of more than $ 3,1 million [Lonner, 2006].

"Biotest" NPK is "Runo's" closest external partner (150 km). The business connections between two companies have started in 2003 before EU enlargement, but the annual turnover between two companies had grown few years after (see table 1).

[1] MA, email: vd1980@yahoo.com

The Polish accession to EU faced new possibilities for common relations between foreign partners. Basically the herbal market in EU is much better developed than in former Soviet countries. Nevertheless there is a huge difference between countries in the Union. The biggest consumers of raw botanicals are Germany and France. Doing business with Germany for more than 10 years "Runo" has developed strong relations with companies in Germany supplying herbs to this country. The Polish herbal company received the German Organic Certificate on wild plants (herbs, leaves, blossoms, roots) even before the country's access to the EU. So, the trade relations between "Runo" and German companies did not change much after common market foundation. , zolin@unive.it

Table 1. The medicinal plants export between two companies, kg

Exported by:	Year		
	2004	2005	2006*
"Runo"	31.215	37.533	95.000
"Biotest"	-	850	8.500

- planned, half reached at 01.05.06

Source: "Biotest", "Runo" statistics.

Situation in Belarus

As a pharmaceutical company specializing on natural herbal remedies "Biotest" is always looking for a raw material supply. After the restauration of independence the Belarussian companies had lost their markets for a huge range of goods. The situation in the republic showed that there were no herbal pharmaceutical companies. They appeared on the territory of other independent states: Russia, the Ukraine and Lithuania. Having one of the best forage systems for wild botanicals (herbs, fruits, berries and mushrooms) Belarus now forage less than 5 per cent of the annual wild yield. More than this, the new tariff system between Belarus and Russia from January 1st 2005 canceled the ability of individual farmers sell herbs to Russia. Today Belarussian herbs for export are 10 per cent more expensive. Together with bad quality the high price makes the Belarussian herbs less competitive than any other country source.

Contrary to Poland Belarussian state forage system was build as a system of half-stateowned collection stations. Each forage company served one administrative territory, doing multi-source forage and trade. That is why each of 118 administrative forage operators used to have equipment for any botanical processing. An independent survey has showed that most of the collection stations were over-equipped with dryers, cutters, washing machines, freezers dating from the SU times. Huge sums of depreciation costs made their products too expensive. Nowadays all these machines become outdated. Almost all stations have left the

herb forage business and focused on berries or mushrooms. This business is four times more profitable and takes less labour expenses than the herb collection.

National pharmaceutical companies experience difficulties with raw material for medicine manufacturing. The chemical pharmacy started to import raw material from India and China. The herbal products pharmacy has found the sources of import in Russia, Ukraine and Poland. Currently Belarus values healthcare and safety over business interests yet government regulation effectively limits alternative herbal remedies and local companies.

New trends

A few years experience in business between the Polish and Belarussian herbal companies shows some of their strengths in the international trade:

- short distance (less than 150 km),
- same assortment,
- Belarussian companies can get European quality and standards,
- Belarussian company can purchase herbals and sell it further to Russia,
- Polish company can reach a new market,
- Polish company can purchase cheap herbals and sell it further to Germany.

Poland and Belarus generally operate the same species of medicinal herbs. Each country has two sources of raw herbs: wild-harvested and cultivated. There is no doubt that Polish herbal industry operates better than Belarussian both in the agricultural sphere and in forage industry. However, the enlargement of EU stimulated the connections in the herbal industry between two countries.

The new common marketing strategy is basing on the general factors:

- there are huge amounts of medicinal herbs in Belarus each year, that are not collected; there are enough cheap labour for collection,
- approximately $200.000 are the costs of herb processing manufacture establishment; today the bulk medicinal herbs turnover in “Biotest” is not enough to pay for such investment in the near future,
- there are opportunities for Polish companies to enlarge medicinal herbs supply to Germany; “Runo” has additional capacity for processing more herbs,
- the medicinal herbs customers prefer national herbal products if it shows European quality.

Our survey reflects the increasing willingness of people who are ready to collect medicinal herbs in the frontier area of Belarussian part of Bialowieza Forest. The collection is

still practised across this territory among rural population for own its consumption. The low prices for bulk herbs in Belarus make the individual collectors cross the border to sell herbs in Poland. The distance of ten kilometers between collection stations in Poland and Belarus makes at least 1/3 of the price increase (see table 2). More than this there are species of herbs which are ten times cheaper in Belarus, but show high demand in Germany. There is a small but growing movement of out-of-customs control herbal trade.

As a forage company "Runo" is trying to stimulate such primitive cross-border trade, but the loss of profit is increasing each year because of the complicated trade with individual collectors from Belarus.

Table 2. Average price per 1 kg of bulk herbals 50 km across state border Poland/Belarus, US dollars

Herb common name	Poland		Belarus	
	purchase	sale	purchase	sale
St. John's Wort herb	1,2	1,5	0,7	1,2
Dandelian root	1,9	2,4	2,0	2,3
Equisetum (Horstail) herb	1,2	1,6	0,9	1,4
Nettle herb	1,1	1,5	0,6	1,2
Cascara bark	1,0	1,3	0,4	0,8

Source: prices of forage companies.

At the same time "Biotest" suffers insufficient supply of raw material. Having no equipment for herb primary processing and storage this company prefers commercial import of raw material from Poland more than gathering small quantities from the national suppliers.

Such situation opens new possibilities for cross-border trade. Market requirement have made Belarussian company "Biotest" follow specialization on herbal medicines and import about 50 per cent of raw herbs from the Polish company "Runo". At the same time "Biotest" is representing the Polish interests in Belarus, providing such services as transportation, storage, buying and selling activities and some credit.

"Biotest" is supervising five collecting stations of medicinal herbs and individual collectors in the Belarussian Bialowieza Forest area. The Polish company presents the annual needs of herbs in terms of volume and form. Besides this it determines which plants found in region offer the best opportunities for making profit, makes marketing research and management advice. Cheap Belarussian raw herbs are exported to Poland where they are processed and than sold to Germany. Some of them came back to Belarus as a processed raw material for pharmaceutical manufacture.

The benefits of the tandem increased the Polish exports 2,5 times and the Belarussian exports 10 times.

Obviously the Polish botanicals are more expensive, but they meet the requirements of the EU and present the same quality. These requirements present a pesticide-free technology of growing and storage. Belarussian farmers could not ensure such quality. The acceptable level of pesticides in cultivated herbs currently limits the number of Belarussian suppliers. That is why the amount of cultivated herbs from Poland for the last two years increased from 5,2 up to 28,9 per cent among total botanicals.

Besides this the import of bulk herbal material to Belarus and processing it into medicinal drugs has a positive influence on customers' opinions. More than 75 per cent of pharmacy customers prefer national herbs as a remedy. Only 10 per cent believe that imported herbal drugs are better. This confidence is basing on a belief that the best herbal remedy should be grown under the same climatic conditions under which the patient treated is living. On the contrary more than 70 per cent of patients believe that the imported chemical drugs are better than domestic. That is why the presence of the original Polish herbal drugs on the Belarussian market has changed in the last few years from 3,5 to 1,2 percent. On the other hand the share of imported Polish raw herbs has changed from 4,8 to 27,9 percent.

As a territory of medicinal herbs source more than a half of pharmacy customers mention Bialowieza Savage Forest and make no difference between the Belarussian and Polish parts. That means that generally Belarussian customers will choose Belarussian herbal remedy rather than Polish. But as a source of raw herb they basically will choose the Bialowieza origin even if it stays within the Polish territory.

A very positive reputation of Bialowieza is playing the general role in the regional herbal market operations. Nowadays it is the market where the Polish company provide the raw herbs and the Belarussian companies manufacture herbal drugs.

Conclusions

The future of regional market is basing on the cluster opportunity. The co-operation between the Belarussian and Polish companies could base on:

- the ability to collect, form and realize a huge parties of herbs; the coordination of the collection and marketing policy,
- the use of the low Belarussian labour costs; the ability to compete because of small prices for raw herbs,
- the experience of the Polish forage companies to drive business; the use of stable channels of sale to the EU,

- the exploitation of Bialowieza herb origin as an organic product; the applying of the EU quality standards.

The multinational cluster offers a few more pluses. As a seasonal sphere of business the wild herbs collection demands huge seasonal funds. The maximum of funds provision is necessary at the end of summer. The common cluster operation could divide money needs between the partners. The presence of forage and manufacturing companies eliminates the seasoning of business by cross-company payment. Usually the pharmaceutical company could invest money in collection at the from the beginning of the year till the mid of summer.

For the first time the process of wild herbs collection on the Belarussian territory should be organized and controlled by the Polish partners. The day-to-day management could be done by a Belarussian representative.

Such pre-border co-operation could enlarge business in three ways. First of all the European standards for raw herbs and the increase of wild plant collection could enlarge the herbal remedy production in Belarus. The lack of native herbs could be covered by import from the Polish territory.

Second, there is an opportunity to export herbs to Russia via the Belarus-Russia Commonwealth (from 1998). This country is suffering the absence of European quality herbs. In spite of the Chernobyl catastrophy there is still a positive opinion about Bialowieza as a source of herbs.

Third, there is an opportunity to increase export to other EU countries. The Polish company as a member of the common market expresses its guaranty on herbs of Belarussian origin.

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Edi Defrancesco[1]
Università di Padova, Italy
M.Bruna Zolin[2]
Università Cà Foscari Venezia, Italy

EU ENLARGEMENT AND AGRICULTURAL TRADE BETWEEN NEW AND OLD MEMBER STATES: ANY CHANGES ONE YEAR AFTER ACCESSION?[3]

Abstract. The paper aims to evaluate whether or not the last EU enlargement to the new 10 member states (EUN-10) has influenced the intra EU trade of agricultural products. In particular, the analysis focuses on the effects on trade between two groups of countries EU-15 and EUN-8 (i.e. the Central-Eastern Europe new members countries) of the EU-accession process. The import-export flows show a noticeable increase in trade between the two areas over the last decade. This increase surely stems from the opening up process, but according to second best theory in international trade which applies to Customs Unions – it not necessarily favours efficiency as far as social welfare is concerned. The analysis shows also that the comparative advantages in certain products, which ten years ago fuelled trade, do not appear to have altered the position of the two groups of countries. Focusing on agricultural products the integration process, which was already underway during the pre-accession period, has maintained and not reduced their specific specialization.

Keywords: EU enlargement, agricultural trade

Introduction

The last EU enlargement to the new 10 member states (EUN-10) has been preceded by a large debate inside the EU-15 on its medium-long run effects on the agriculture of the different member countries and on trade. For example, differing positions reflected the concern of farmers and, more generally, of other actors who, despite being fully aware of the enormous opportunities offered by expansion, were nonetheless concerned by the effects of increased competitiveness within the EU. Many Mediterranean member countries' farmers – among them, Italians - raised further doubts on a possible future reduction of the CAP support (both production related support and structural or rural development funds), taking into account the structural and products-related factors differentiating their agriculture from Central-Northern Europe one.

Just two years after the EUN-10 accession, the paper focuses on certain aspects of the economic integration process of Central and East European countries (EUN-8), exploring the effects of the enlargement on the agricultural products' trade , which was already taking place well before May 2004 under the pre accession process. However, the scope and complexity of a complete, across the board view of the results regarding the extent with which the objective of cohesion has been reached, will need a more specific, detailed analysis. In particular, the work

[1] Associate professor, email: edi.defrancesco@unipd.it
[2] Associate professor, email: zolin@unive.it
[3] The authors thank the Regional Statistics Office of the Veneto Region for the data provision and Dr Sarah Vanin for her help in data processing. They thank also the anonymous reviewers of the paper for their comments and suggestions.

examines Eurostat data on agricultural products' trade between old and new EU member states and compares the years 1995, 1996 and 2005 by presenting a selection of indices on trade between the two groups of countries, namely EU-15 and EUN-8.

The determinants of international trade and international specialization are well known and they can be explained by economic theory based on: the Ricardian Model of Comparative Advantage (Torrens-Ricardo), that defines their determinants as technological differences; the Heckscher-Ohlin theory that emphasises the differences in factor endowments; the neo-classical theory (Mill, Marshall and numerous modern day scholars) which considers differences in technology, factor endowments and also in tastes[4]. The validity of the traditional comparative advantage theory has been recently reconfirmed by several authors [Harrigan 1997][5].

Trade analyses elaborated as a result of EU enlargement, were particularly abundant in the 1990s. They tended mainly to attribute the countries of Central and Eastern Europe with a comparative advantage based on the production of agricultural goods, even if some authors distinguished between the medium and long run [The Economic… 2001, Reform… 2003] effects. Agricultural growth would play a decisive role in the medium run. In the long run, on the other hand, the agricultural sector would lose its important role in favour of the other sectors. Trade relations would necessarily be characterised by a strong increase of the agricultural products' trade. However, according to the "second best" theory, it cannot be denied that the trade liberalization among a limited number of countries ceases to promote a high level of social welfare, whether locally or worldwide, even if certain agents may stand to benefit [Lipsey & Lancaster 1956].

Enlargement and trade between EU member states

In order to evaluate the level of trade-related economic integration reached roughly one year after expansion, and to determine to what extent the law of comparative costs has influenced this process, several indices have been calculated based on trade flows among the EU-15, as a whole and the EUN-8 countries, which have been considered separately. For this reason, the analysed trade flows do not represent the total trade of the EU as a whole. In order to correctly interpret the obtained results, it has also to be taken into account that although all the EU countries are all more

[4] In brief, the assumptions that form the basis of the Ricardian theory, and from which they take their name, also incorporate the theory of "comparative costs" which characterise the current differences in production techniques. Each state will benefit from specializing in the production of a good that provides it with the greatest advantage (or the lesser disadvantage). The theory also aims to demonstrate that trade offers advantages to all the countries involved. Ricardo's model, however, only takes into account one production factor – labour – and bases its comparative advantage on the differences in productivity between countries. Given that these divergences in fact form the bases for international trade, differences in the factor endowment of each country contribute towards favouring trade but, a realistic analysis of international trade must also consider other factors (land, capital etc.) and intra industrial border trade . According to Heckscher and Ohlin each state exports the good that requires relatively more intensive exploitation of the production factors required and which are more abundant [Gandolfo, 1989].

[5] These authors take into account the qualitative differences of the products, reflecting the differences in the production skills and technology of the producing countries.

or less medium sized, the EU, as a whole, represents one of the largest economic systems in the world (e.g. the last enlargement has increased the number of consumers from 380 million to 454 million) and - like other trade unions - remains relatively closed to world market.

The total EU-15 exchanges (import + export) of agricultural products with the EUN-8 countries registered an increase in the ten-year period 1995-2005 equal to 176.57% at current values and 133.45% at 2005 constant values, for a total of Euro 16.4 billion in 2005. One of the factors affecting the trade increase is the import of products from the EUN-8 into the EU-15 which has grown more rapidly than exports (+165% and 111.7); in absolute terms, however, the latter are still higher and, as far as the balance of trade is concerned, they are still in the lead. It is clear that such trade increases are to a large extent due to the liberalization of trade and accession to the EU.

Table 1. EU-15 exports towards the EUN-8 (in millions of Euro/ECU), percentage variation (var%) and the EU-15 propensity towards exports in EUN-8 (EU-15 Exp in EUN-8/ EU-15 GDP *100)

States**	1995*	1996*	2005	var % 2005/1995*	var % 2005/1996*	The EU-15 propensity towards export of agro-food products in the nations considered (%)
CZ	903.57	980.86	1,934.35	114.08	97.21	0.02
EE	213.13	259.39	350.24	64.33	35.02	0.00
HU	511.20	431.19	1,432.13	180.15	232.13	0.01
LT	190.74	237.88	401.65	110.58	68.85	0.00
LV	232.32	244.43	311.13	33.92	27.29	0.00
PL	1,469.15	1,733.67	3,262.98	122.10	88.21	0.03
SL	392.26	388.27	638.00	62.65	64.32	0.01
SK	240.97	257.99	462.36	91.87	79.21	0.00
Total	**4,153.33**	**4,533.68**	**8,792.85**	**111.71**	**93.95**	**0.09**

*Updated to 2005 using harmonized indices of consumer prices EU-15 (2005=100)
** Czech Republic (CZ), Estonia (EE), Hungary (HU), Lithuania (LT), Latvia (LV), Poland (PL), Slovenia (SL) and Slovakia (SK).
Source: our elaboration of Eurostat data.

Table 2. Imports into the EU-15 from the EUN-8 (in millions of Euro/ECU), percentage variation (var%) and the propensity of the EUN-8 towards exports in the EU-15 (Imp into the EU-15 from the EUN-8 considered state/GDP of country*100)

States	1995*	1996*	2005	var % 2005/1995*	var % 2005/1996*	Propensity of the EUN-8 towards the export of agro-food products in the EU-15 (%)
CZ	342.62	321.96	1.059.58	209.26	229.10	1.08
EE	32.58	44.44	171.13	425.26	285.07	1.62
HU	1,109.36	1,166.11	1,809.66	63.13	55.19	2.06
LT	61.25	76.25	395.99	546.53	419.33	1.92
LV	17.77	21.52	153.41	763.30	612.93	1.20
PL	1,187.66	1,137.46	3,556.52	199.46	212.67	1.46
SL	74.75	80.11	196.50	162.86	145.28	0.72
SK	71.79	73.44	325.20	352.97	342.78	0.85
Total	**2,897.78**	**2,921.29**	**7,668.00**	**164.62**	**162.49**	**1.42**

* Updated to 2005 using Harmonized Indices of Consumer Prices UE 15 (2005=100)
Source: our elaboration of Eurostat data.

Table 3. Trade (Imp+Exp) between the EU-15 and the EUN-8, (millions of Euro/ECU), percentage variation (var%), degree of opening up to trade by the EU-15 compared with EUN-8 countries (Imp+Exp/GDP EU-15*100) and degree of opening by EUN-8 towards trade with the EU-15 (Imp+Exp/GDP of the considered country*100)

States	1995*	1996*	2005	var % 2005/1995*	var % 2005/1996*	Opening up of EU-15 towards EUN-8 (%)	Opening up of EUN-8 towards EU-15 (%)
CZ	1,246.19	1,302.82	2,993.93	140.25	129.80	0.03	3.04
EE	245.71	303.84	521.37	112.19	71.60	0.01	4.95
HU	1,620.56	1,597.30	3,241.80	100.04	102.95	0.03	3.69
LT	251.99	314.13	797.65	216.54	153.92	0.01	3.87
LV	250.09	265.94	464.55	85.75	74.68	0.00	3.63
PL	2,656.81	2,871.12	6,819.51	156.68	137.52	0.07	2.80
SL	467.01	468.38	834.50	78.69	78.17	0.01	3.05
SK	312.76	331.44	787.56	151.81	137.62	0.01	2.07
Total	**7,051.12**	**7,454.97**	**16,460.85**	**133.45**	**120.80**	**0.16**	**3.05**

*Updated to 2005 using Harmonized Indices of Consumer Prices UE 15 (2005=100)
Source: our elaboration of Eurostat data.

Table 4. Balance of Exp-Imp in the EU-15 towards EUN-8 (millions of Euro/ECU) and percentage variation (var%)

States	**1995***	**1996***	**2005**	**var % 2005/1995***	**var % 2005/1996***
CZ	560.96	658.90	874.77	0.56	0.33
EE	180.55	214.95	179.12	-0.01	-0.17
HU	-598.16	-734.91	-377.53	-0.37	-0.49
LT	129.49	161.62	5.66	-0.96	-0.96
LV	214.55	222.91	157.72	-0.26	-0.29
PL	281.49	596.21	-293.54	-2.04	-1.49
SL	317.50	308.16	441.51	0.39	0.43
SK	169.18	184.55	137.16	-0.19	-0.26
Total	**1,255.55**	**1,612.39**	**1,124.85**	**-0.10**	**-0.30**

*Updated to 2005 using Harmonized Indices of Consumer Prices UE 15 (2005=100)
Source: our elaboration of Eurostat data.

In relation to the agro-food sector, the role played by the individual EUN-8 countries is different. This can be seen, for example, looking at their differing UAA (Utilized Agricultural Area): both in absolute and percentage values, it is very high in Poland, Hungary and the Czech Republic, as regard as the other EUN-8 states and most EU-15 countries. As far as the share of the total added value from agriculture is concerned, however, in all the EUN-8 countries it is higher than in the EU-15, with the sole exception of the Czech Republic; Hungary and Poland are at the top of the scale here too.

Poland continues to be in first place as far as exports for the decade being examined are concerned, followed by Hungary and the Czech Republic. The more significant increases, however, are registered by Latvia and Lithuania. Comparing EU-15 imports with the GDP of the exporting states, and by classifying the countries exporting towards the EU-15 based on the importance of each state as far as its economy is concerned, we can see that - among those nations exporting towards the EU-15, - Hungary and Lithuania head the list (roughly 2% of their GDP), followed by Estonia at 1.6%, and Poland at 1.5%. The classification based on exports is still headed by Poland,

followed by the Czech Republic and Hungary. Expressing exports in relative terms to GDP, the ranking of countries do not significantly changes. However, by comparing the relative opening index of the EU-15 towards the EUN-8 countries with the EUN-8 countries ones towards the EU-15 the 'scale effect' (i.e. the different size on the EU-15 as a whole compared to each EUN-8 country) has to be taken into account. A similar caution is needed comparing the above mentioned results with index related to the EU-15, where its agricultural exports towards the EUN-8 represent 0.09% of the total EU-15 GDP.

Table 5. UAA (km^2) and gross agriculture value added at basic prices (millions of Euro)

States	UAA (2003)	% total land	Agricultural gross value added at basic prices (current values 2004)	% total gross value added from agriculture
CZ	36,314	46.0	1,255	1.6
EE	7,703	17.0	199	2.5
HU	58,624	63.0	2,531	3.7
LT	26,043	39.9	516	3.2
LV	16,421	25.4	285	2.9
PL	163,008	52.1	5,974	3.3
SL	4,905	24.2	499	2.2
SK	19,347	39.5	646	2.4
EU-15	1,309,849	41.5	155,396	1.7

Source: our elaboration of Eurostat data.

By observing the adjusted balance6 we can see that the EU-15 remains the main exporter of agricultural products towards the EUN-8, even if the advantages are decidedly fewer than they were ten years ago. In general, the EUN-8 states are improving their position if compared with EU-15 countries. The case of Hungary, for example, is noteworthy in that it appears to be the only net exporting country towards the EU-15 even if the margins are less accentuated than in 1995. The tendency is reversed if we consider Poland who has completely about-turned its position during the time span being considered and has now become a net exporter towards the "Old Europe".

Table 6. Adjusted balance (Exp-Imp)/(Exp+Imp)*100 of EU-15 with the EUN-8 countries

States	1995 *	1996 *	2005
CZ	45.01	50.57	29.22
EE	73.48	70.75	34.35
HU	-36.91	-46.01	-11.65
LT	51.39	51.45	0.71
LV	85.79	83.82	33.95
PL	10.59	20.77	-4.30
SL	67.99	65.79	52.91
SK	54.09	55.68	17.42
Total	**17.81**	**21.63**	**6.83**

*Updated to 2005 using Harmonized Indices of Consumer Prices UE 15 (2005=100)
Source: our elaboration of Eurostat data.

[6] They range from -100 where the nation only imports, to + 100 where the nation only exports. Where the result is at par the adjusted balance is 0 as the denominator is equal to 0.

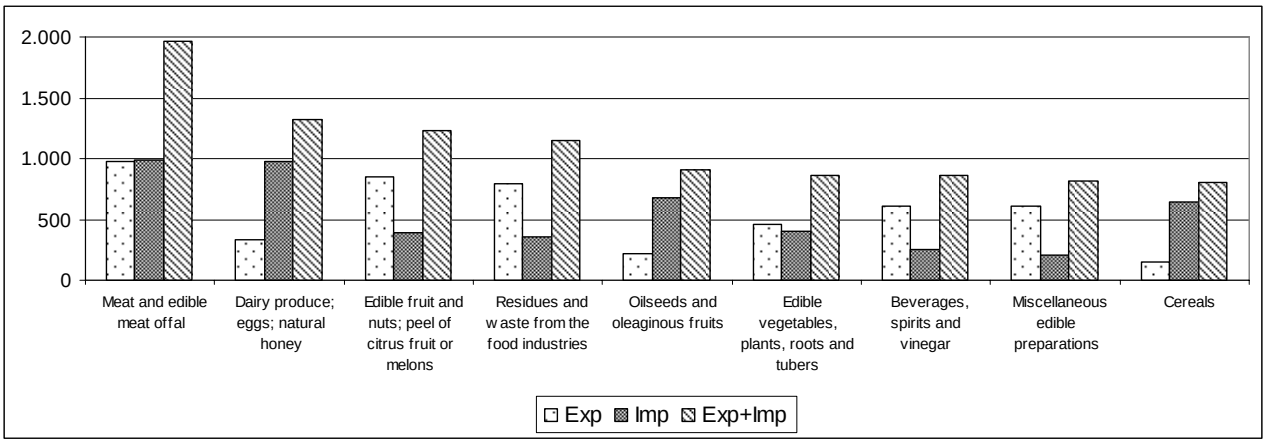
Continuing the analysis in aggregate form, the intensity index of the imbalances confirms the differing positions of the EUN-8 compared with the EU-15. It varies from 0 (trade balance) to 1. The further away from 0 and the closer to 1, the greater the imbalance of trade within the EU-15 when compared with the EUN-8 countries. Obviously, calculated in this specific context, where we are dealing with trade between an aggregate of 15 states and eight individual countries, we cannot expect to have a situation of equilibrium. Nevertheless, the comparison of a single country's index with that of the aggregate allows us to pinpoint the EUN-8 states towards which the EU-15 has the greatest trade imbalance because exports exceed imports. They are as follows: Latvia, Estonia, Lithuania, and Slovenia. Poland is the only state towards which the EU-15 has a lower trade imbalance intensity index than the total average (table 7).

Figures 1-3 summarise the most relevant trade flows between the EU-15 and the EUN-8 by products.

Table 7. Trade imbalance intensity index between EU-15 and EUN-8 countries (percentage)

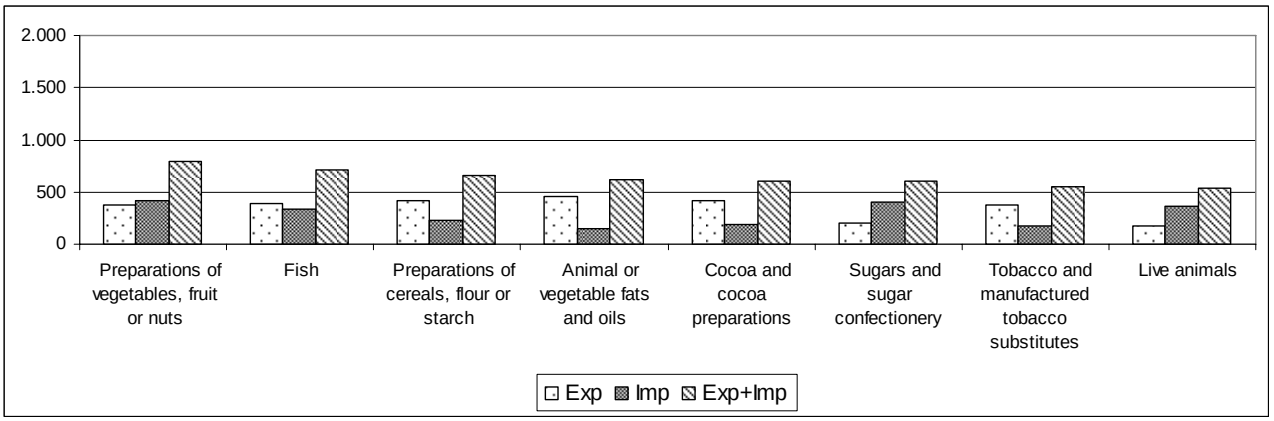
Country	CZ	EE	HU	LT	LV	PL	SL	SK	Total
index	0.55	0.73	0.37	0.59	0.75	0.31	0.58	0.49	0.33

Source: our elaboration of Eurostat data.

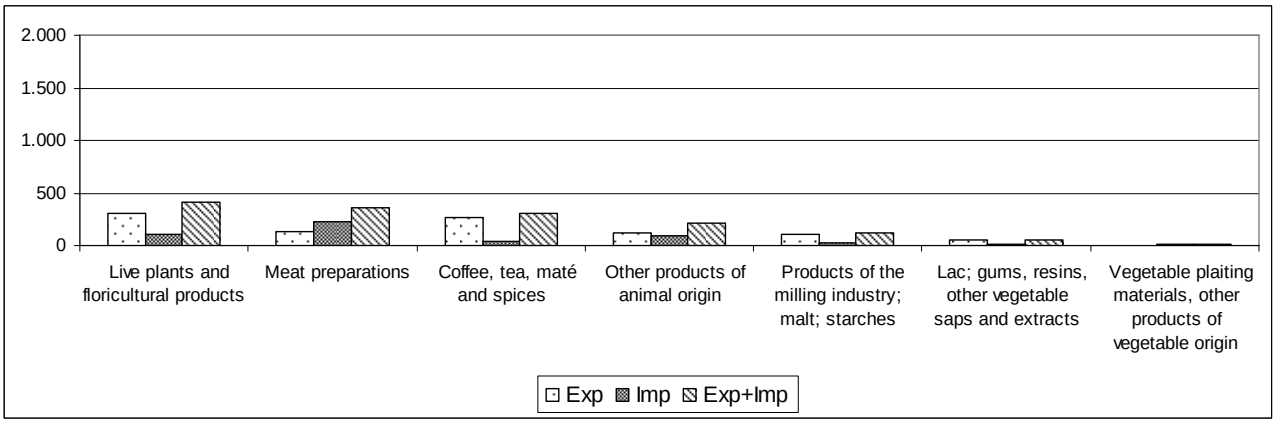


Source: our elaboration of Eurostat data.

Figure 1. Imports and Exports by EU-15 towards the EUN-8 countries by sector (part one) in millions of Euro.



Source: our elaboration of Eurostat data.
Figure 2. Imports and Exports by EU-15 towards the EUN-8 countries by sector (part two) in millions of Euro.



Source: our elaboration of Eurostat data.
Figure 3. Imports and Exports by EU-15 towards the EUN-8 countries by sector (part three) in millions of Euro.

Using the adjusted balance per product as the basic measure of the EUN-8 countries' comparative advantage, we can say that in 2005, the EU-15 principally imported cereals, oilseeds, dairy products; meat products, livestock and sugar are also relevant. These results are confirmed by the related export specialization indices. The EUN-8 states appear to be oriented towards the more traditional products of the continental area. The major disadvantages for the EUN-8 countries compared with the EU-15 can be seen when dealing with milled starch products, animal and vegetable fats, live plants and floricultural products, alcoholic beverages, vinegar and fruit.

The level of trade liberalization per product gauges the importance of trade reported to the economy as a whole. An increase in the index indicator over time points to a greater opening up of the economy. It may go over 100% if the exchanges exceed GDP (this occurs when countries are very small and heavily trade oriented).

Table 8. Adjusted balance per EU-15 products compared with the EUN-8 countries

Products	CZ	EE	HU	LT	LV	PL	SL	SK	Total
Live animals	-68.39	93.09	-10.40	-47.86	81.59	-36.37	-11.93	-64.92	-33.06
Meat and edible meat offal	70.50	75.28	-18.26	37.97	76.61	-27.42	42.88	50.11	-0.49
Dairy produce; eggs; natural honey	-22.92	-81.19	1.74	-83.18	-82.52	-66.62	-1.61	-44.84	-48.94
Living plants and floricultural products	76.43	84.95	80.43	86.59	95.37	35.84	91.39	-26.85	49.33
Edible vegetables, plants, roots and tubers	90.63	83.00	-30.92	-1.91	94.29	-25.54	83.05	44.73	6.44
Edible fruit and nuts; peel of citrus fruit or melons	79.22	70.04	40.40	65.05	73.78	15.87	51.86	24.45	37.43
Cereals	-64.55	-68.48	-78.40	-80.75	-66.50	-25.15	44.77	-48.41	-61.83
Products of the milling industry; malt; starches	27.86	76.07	17.39	90.65	95.44	79.43	97.40	14.36	62.85
Oilseeds and oleaginous fruits	-58.82	-79.26	-73.97	-67.19	-71.49	0.01	7.31	-42.66	-50.54
Animal or vegetable fats and oils	77.49	64.45	0.59	99.57	99.74	46.59	82.89	55.87	50.81
Sugars and sugar confectionery	-43.99	64.15	-37.37	7.80	22.17	-30.25	-36.17	-67.21	-33.99
Cereals, flour or starch preparations	58.34	68.05	60.76	51.37	72.00	-10.90	96.51	82.37	28.79
Beverages, spirits and vinegar	19.77	90.87	15.90	63.10	74.50	46.33	55.39	66.49	41.05
Residues and waste from the food industries	75.40	63.99	7.47	-35.35	79.37	44.35	82.04	73.75	37.14
Tobacco and manufactured tobacco substitutes	13.04	99.98	68.79	97.71	53.10	10.41	99.91	78.70	34.71
Total agricultural products	**29.22**	**34.35**	**-11.65**	**0.71**	**33.95**	**-4.30**	**52.91**	**17.42**	**6.83**

Source: our elaboration of Eurostat data.

The EU-15 opening up index to the EUN-8 for total agricultural products equals 16; this value is particularly remarkable if compared with the opening up of trade towards the rest of the world, which is at around 1.23. The EU-15 versus EUN-8 propensity towards exports equals 0.09 as against 0.54 for the rest of the world.

The propensity towards the export of EU-15 versus EUN-8 places meat and edible meat offal at the top of the list, followed by fruit, animal feed and by-products from the food industry. Alcoholic beverages and miscellaneous food products are in fourth place. Trade openings by product show meat and edible offal, dairy and milk products, fruit and residues and waste from the food industry to be increasingly more important.

Specialisation indices – calculated on the ratio between the exports of each one of the individual EUN-8 countries towards the EU-15 and EU-15 total imports – highlight the inherent specialization of exports from EUN-8 towards the EU-15, compared with the EU-15 imports of products from outside the EU; this evidence can be considered as an indicator which – to some extent – could show the existence of a second best equilibrium[7]).

[7] Before a country enters a Free Trade Area (FTA) it has policy imposed distortions already in place in the form of tariff barriers applied on imports of goods. This means that the initial equilibrium can be characterized as a second-best equilibrium. When the FTA is formed some of these distortions are removed. However, other distortions remain (e.g. tariffs applied for non-member countries). If the partial tariff removal substantially raises the negative effects caused by the remaining tariff barriers with the non-FTA countries, then the efficiency improvements caused by free trade within the FTA could be outweighed by the negative welfare effects caused by the remaining barriers outside the FTA and national welfare could fall.

Table 9. Indices showing propensity to export and product demand

Description of agricultural products	Propensity of EU-15 to export to EUN-8	Propensity of EU-15 to export to rest of world	Opening up of EU-15 to EUN-8	Opening up of EU-15 to rest of world	Propensity of EUN-8 to export to EU-15	Opening up of EUN-8 to EU-15
Live animals	0.002	0.009	0.005	0.015	0.066	0.100
Meat and edible meat offal	0.010	0.033	0.019	0.064	0.183	0.364
Dairy produce; eggs; natural honey	0.003	0.045	0.013	0.053	0.182	0.244
Live plants and floricultural products	0.003	0.014	0.004	0.026	0.019	0.076
Edible vegetables, plants, roots and tubers	0.004	0.012	0.008	0.039	0.075	0.160
Edible fruit and nuts; peel of citrus fruit or melons	0.008	0.015	0.012	0.119	0.071	0.228
Cereals	0.001	0.017	0.008	0.036	0.120	0.148
Products of the milling industry; malt; starches	0.001	0.014	0.001	0.014	0.004	0.023
Oilseeds and oleaginous fruits	0.002	0.008	0.009	0.056	0.126	0.168
Animal or vegetable fats and oils	0.005	0.024	0.006	0.061	0.028	0.114
Sugars and sugar confectionery	0.002	0.019	0.006	0.035	0.074	0.114
Preparations of cereals, flour or starch	0.004	0.033	0.006	0.040	0.043	0.122
Beverages, spirits and vinegar	0.006	0.133	0.008	0.171	0.047	0.159
Total agricultural products	**0.086**	**0.542**	**0.160**	**1.235**	**1.422**	**3.053**

Source: our elaboration of Eurostat data.

Table 10. Related specialization per export sector of the EUN-8 countries towards EU-15 compared with total EU-15 imports

Products	CZ	EE	HU	LT	LV	PL	SL	SK	**Total EUN-8**
Live animals	5.11	0.03	4.34	2.72	0.24	4.31	2.56	6.57	**5.54**
Meat and edible meat offal	0.66	0.65	3.40	0.78	0.48	3.43	2.79	0.95	**2.93**
Dairy produce; eggs; natural honey	6.16	16.63	1.89	10.95	10.42	7.85	8.18	6.95	**11.14**
Live plants and floricultural products	0.42	0.39	0.17	0.12	0.10	0.95	0.31	5.46	**0.78**
Edible vegetables, plants, roots and tubers	0.16	0.16	1.47	1.37	0.07	1.87	0.53	0.62	**1.36**
Edible fruit and nuts; peel of citrus fruit or melons	0.16	0.16	0.17	0.15	0.16	0.50	0.65	0.66	**0.33**
Cereals	3.17	1.37	5.93	3.86	6.07	0.87	0.47	1.85	**3.02**
Products of the milling industry; malt; starches	4.74	3.81	1.74	0.60	0.62	1.17	0.93	20.34	**3.01**
Oilseeds and oleaginous fruits	2.01	2.50	1.98	2.47	4.15	0.38	0.81	1.45	**1.29**
Animal or vegetable fats and oils	0.19	0.23	0.55	0.00	0.00	0.43	0.17	0.37	**0.36**
Sugars and sugar confectionery	5.27	0.81	1.20	0.66	0.52	1.39	6.42	3.99	**2.24**
Preparations of cereals, flour or starch	2.43	1.30	0.85	0.74	0.90	5.11	0.33	0.57	**3.22**
Beverages, spirits and vinegar	1.74	0.39	0.71	0.26	0.95	0.27	1.14	0.34	**0.60**

Source: our elaboration of Eurostat data.

The product-specific indexes highlight some important elements. Briefly, the EUN-8 countries have a strong specialization in specific sectors. Milk and dairy products and animal products indexes have the highest values. The Baltic states make the biggest contribution towards this result. The second place belongs to the livestock sector index which is Czech Republic, Slovakia, Hungary and Poland's strong point. Milled products, starch and glutens are in third position thanks, mainly, to exports from Poland. Cereals also rank high due to exports from Latvia and Hungary.

A country by country analysis of the index reveals that: i) the Czech Republic is slightly in advantage regarding the production of milk and dairy produce and its derivatives together with animal products, live animals, sugar, starch and meat products; ii) as far as exports are concerned, Estonia is strongly oriented towards milk and dairy produce and its derivatives, but much less so with regard to milled products, starches and malt; iii) cereals dominate in Hungary, followed by livestock and meat products; iv) Latvia and Lithuania specialize in milk and dairy produce and its derivatives, while cereals occupy a much more modest position; v) Poland does not stand out for any product in particular even though some product categories appear to be more dynamic than others. The latter refers to milk and dairy produce and its derivatives, animal products, milled products, flours and starches, livestock and meat and edible offal vi) Slovenia has more prominent results in the milk and dairy products sector and their derivatives, animal products and sugars; vii) Slovakia on the other hand specializes more in milled products, flours and starches, followed by milk and dairy products and their derivatives, animal products and livestock.

The EU-15 exports towards the EUN-8 countries appear to be less specialized with results that do not exceed 3.6% in any one sector. Their strongest export sectors seem to be fruit, vegetable by-products from the food industry and animal feedstuffs.

Concluding remarks

The trade analysis carried out between the EU-15 and the EU 8 was based on the assumption that the European Union is still not fully open towards foreign trade with regard to numerous agricultural product and despite its recently revision of market policies. The gradual shift from price to income support has not, in fact, yet completely dismantled the price guarantee structure or eliminated the clause concerning Community preferences. The trade direction of many products is thus partially conditioned.

The trade flows of agricultural products between the EU-15 and the EUN-8 countries has, nonetheless, highlighted a noticeable increase in trade between the two areas over the last decade. This increase surely stems from the opening up process which culminated in May 2004 with the accession of the 10 new member states. As a result, and taking into account also that the EU has not

yet fully completed the liberalisation process toward the world market, we can assume that the EU-25 trade acts under the "second best" theory. As well known, it applies to customs unions and – favouring the exchanges among the member countries with respect to external trade – it does not necessarily favour efficiency as far as social welfare is concerned.

The EU has more recently been more concerned with its desire for cohesion and, as a result, economic integration. But which integration concept has this analysis brought to light? Although limited to agricultural goods, the comparison of the 2005 import-export flows with similar reports from previous years [Agricoltura… 1997] demonstrates that the opening up of trade does not seem to have influenced the specialization areas of either group of countries. The comparative advantages of certain product categories, which ten years ago fuelled trade, do not appear to have altered their position. Within agricultural products sectors the integration process, which was already underway during the pre-accession period, has maintained and not reduced specific specializations, contrary to what had been suggested by certain authors [Bugarelli 2001]. The fears of the Mediterranean EU countries with regard to enlargement seem to be partially unfounded, at least in the short run, concerning both the volume of exchanges in absolute terms and particularly "Mediterranean products" such as fruits and vegetables. The situation of cereals and livestock chain seems to be more controversial, although it is currently being supported, in part, by the rise in consumption within the EUN-8 countries and by the milk quota regimes.

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Appendix: indices applied

Adjusted balance: $\frac{E_i - M_i}{E_i + M_i} \times 100$ with E_i and Mi indicating exports and imports of the i-th product. Where the subscript is not present, it means the total agro-food exports and imports.

Intensity of imbalance: $\frac{\sum_{i=1}^{n} |E_i - M_i|}{E + M}$ with E_i and Mi with E_i and Mi indicating exports and imports of the i-th product, E and M represent total exports and imports respectively.

Opening up of trade per product: $\frac{E_i + M_i}{GDP} \times 100$, with E_i and M_i representing the export and import of the i-th product respectively, GDP gross domestic product. Where the subscript is not present, it means the total agro-food exports and imports.

Propensity to export: $\frac{E_i}{GDP} \times 100$, with E_i representing the export of the i-th product, GDP gross domestic product. Where the subscript is not present, it means the total agro-food exports and imports.

Related specialization per sector: $\frac{(E_{Pj} / E_P)}{(M_{EUj} / M_{EU})}$, where E_{Pj} are the exports of the p-th nation related to the j-th sector towards the EU-15, E_P the total agro-food exports of the p-th nation towards the EU-15, M_{EUj} the EU-15 imports related to the j-th sector but from countries outside the EU-15 and net of imports from the p-th nation.

Serhiyi Demyanenko[1]
Department of Agribusiness Economics
Kiev National Economic University, Ukraine

GLOBALIZATION AND DEVELOPMENT OF UKRAINIAN AGRICULTURE

Abstract. Ukrainian agriculture has a great potential for development in the framework of globalization and EU enlargement. The main direction for this aim is increasing of competitiveness of agricultural products through improvement of agricultural education and research. Taken under consideration the energy problems that world economy faces more and more, agriculture should play important role in keeping a country's energy balance by supplying renewable energy sources like biodiesel, ethanol, and hard organic fuel.

Key words: agricultural development, energy sources, agricultural education and research, competitiveness

The world economy has a clear tendency to globalization. Enlargement of EU and new negotiations in the framework of Doha round of WTO are the examples of this tendency. Any country, including Poland or Ukraine, more and more becomes a part of a globalization process. In this connection development of Agricultural Economics as an important part of Economics is a promising direction for Ukrainian scientists.

Regarding to the basis economic dilemma that consist in unlimited society's wants and limited economic resources, the main task of Economics as a Science is determination of directions for the use of scarce resources. To do it in new economic conditions determined by the process of globalization, new approaches in the theory and applied Economics should be developed.

In the economic theory it is needed to get back to the initial principles of economic development. First of all it is connected with the energy balance of the whole society and the individuals. Everything what surrounds us has an energy value. Above all important things are foodstuffs without which people can not live. To heat dwellings people use energy accumulated in the past like gas, oil, coal, wood or synthetic energy sources such as nuclear or thermonuclear power. The same energy is needed to produce the products of industry: to smelt steel, manufacture equipments, machines and vehicles, build roads, other constructions and houses, produce the products of chemical industry and others like that. Thus the life of people on Earth and also the economic development of society is determined by energy balance existing in the certain moment of time. Thus the development of economy and society will be determined by this balance and, consequently, it will be a crucial issue for the socio-economic development of Ukraine in the XXI and next centuries.

[1] Prof. Dr., email: demyanenko@kneu.kiev.ua

Already today Ukraine runs into definite energy problems. They are the well known events which took place at the beginning of the current year related to the gas supply to Ukraine and the European Union from Russia and Turkestan, periodic so-called «oil crises», crises related to the markets of agricultural products and foodstuffs such as cereals, sugar, meat. With all of them according to the specialized forecasters Ukraine can be faced in the near future. That is why the energy safety of the country and development of the industry branches that will secure a balance in it will determine directions of the socio-economic development of Ukraine in the XXI century.

Coming back to the economic theory it should be mentioned that David Ricardo and Karl Marx saw the substance of economic value in the labour input (labour theory of value). Embodiment of this theory in the economic and public development in the XX century created a bloodiest period in the civilization's history. Many countries including Poland and Ukraine were victims of implementation of this theory. In opposite to the market economy based on private ownership and market forces, Soviet Union style's economies were based on the state ownership and central economic planning.

Today there is a necessity to develop an economic theory on the energy basis. Ricardo, Smith and Marx did not explore the sources of additional value to the end. We should see additional value in creation of a new matter but together with the new matter also a new energy. It takes place only in the process of photosynthesis. Billions of years ago by means of photosynthesis such energy sources were created like coal, oil and gas which have an organic origin. It should be noted that the economic theory that is grounded on an energy value and called physical economy was created by French scientists in the XVIIth century. Ukrainian scientists also participated in development of this theory, for example, Serhiy Podolynskyi, who discussed with Karl Marx the theory of value founded on labour, which was also denied by Volodymyr Vernadskyi, first President of Ukrainian Academy of Science|, and lately Mykola Rudenko, an accomplished philosopher and writer.

Thus one of directions of the socio-economic development of Ukraine appears to be a realignment of agriculture, as a fundamental principle of the energy balance of society. In the worldwide specialization Ukraine takes a unique place. Not a single country in the world keeps such reserves of land that are suitable for production of agricultural products as Ukraine. This uniqueness can be expressed by a simple calculation: if in Ukraine there is one fourth of the world supplies of black soil and its population is 46 million people, then the other 75 % of black soil belongs to the 6 billion people of World population. In absolute numbers it looks so, that there are 0,5 hectares of black soil per one habitant of Ukraine and 0,015 hectares per one inhabitant of the World. That means Ukraine has resources of black

soil 30 times higher in comparison with the rest of World. This factor should be taken into account in the development of the socio-economic concept of Ukraine in the XXI century. However today we have a paradoxical situation in agriculture with regard to its productivity which is almost three times lower in comparison with productivity in the countries of Western Europe and North America. If in Ukraine the yield of grain and productivity of cows are respectively 2,5 – 3,0 tons/year, in the developed countries these indices are 7 – 8 tons/year. It should be taken under consideration that conditions for agricultural production in Ukraine are better than in majority of countries. That is why the purpose of increase of productivity and efficiency of resources in agriculture and, above all, the productivity of land, was the aim of the agrarian and economic reform implemented in Ukraine. Unfortunately, this reform has not reached the declared goals as yet. During the reform the situation in Ukrainian agriculture became even worse comparatively with the pre-reform period. Certainly this problem will remain for Ukraine also in the XXI century. First of all it will be connected with increasing the productivity of agricultural land as a fundamental principle of agriculture. In the next ten years Ukraine should produce about 100 million tons of grain, or 2,5 times more in comparison with the present level. It must be taken into account that gas and oil supplies earlier or later will end. They are limited, while production of agricultural goods appears repeatable and growing. Principle is simple: we put into ground in spring one grain, and in the autumn we harvest several dozens of grain. Exactly here we see the creation of a real additional value which thereafter due to labour forces passes into all other goods and services in the economy. Just as this displays the basic law of physical economy, also the law of energy conservation and transformation is working.

Other direction of the use of the limited production resources is concentration on those industries of economy where Ukraine can take competitive advantages above other countries of the world. First and foremost it applies to production of alternative energy sources: fuel on the basis of organic raw material (biodiesel and ethanol), hard organic fuel, development of water, wind and nuclear power engineering. Possibly in a near future our scientists will invent yet another energy sources. But in order that it happens it is necessary to finance domestic scientific research, both fundamental and applied. Ukraine can also take competitive advantages in such spheres of science and economy as medicine, space engineering, shipbuilding. Concentration on these directions of resources use will allow the country to produce competitive products that is the key element in the process of globalization. Unfortunately, today Ukraine takes only 84th place among 117 countries of the world regarding the level of competitiveness of industrial commodities.

From here one of the main problems that Ukraine faces to is the low quality of management at all levels, beginning from an enterprise to the government. The process of globalization is characterized by a sharp increase of exactly this key element of economic activity. Above all things it touches multinational corporations which swiftly conquer the national markets and they affect all segments of economy. The observance of standards of quality of products is a key factor of conquest of these markets by the transnational companies, which is achieved thanks to innovations in the management and marketing. All know the existent standards of quality such as ISO 9000, ISO 14000, ISO 17025, ISO 22000 and others. These standards apply to all parts of the economic activity of companies, from the technological processes to the quality of management. There is a hard competition between these companies which, essentially, does not leave place for national companies, because of too high quality of products, management and enormous financial streams which can be provided only by transnational companies. However, in order to maintain high competitive position under the present economic conditions, it is already not enough to provide the noted standards of quality. Today between front-rank companies there is a competition above these standards and the transnational companies win this struggle because they can provide more high-quality goods and services to the customers.

What in this situation should be done by Ukraine? First of all it is development of scientific research, teaching technologies and raising the level of staff skill. Fundamental and applied scientific research are needed for development of new technologies, in particular, for development of new energy sources, teaching and raising the level of staff skill in order to be able to follow modern tendencies in the economic science and management. Task of Agricultural Economics is not only to follow modern tendencies, but also to operate on the passing. In this approaches we can use a quotation from the famous Canadian hockey player, Wayne Gretzky. He said of his secret of success “I skate to where the puck is going to be, not where it is now.” So we should look ahead at the actions and directions that will make Ukraine’s agriculture and rural economy more productive and competitive under the global market conditions in the future.

In order to follow the modern tendencies in Economy first of all innovations should be provided in the educational process and state should support development of agrarian science. Agricultural science is a sphere of economy which can not successfully function only due to market initiatives but needs a assistance from the state. Scientific research in the field of agriculture play a vital part in the improvement of technologies that lower production costs, increase productivity of plants and animals and also help to cope with diseases of plants and animals.

With the purpose of adaptation of the system of agricultural education to the requirements of current tendencies in economy it is necessary to revise the syllabuses and programs of subjects as well as the methods of teaching, including real possibilities of choice of subjects and teachers by the students. Financing of the agricultural education should be improved, especially the teachers' salaries in accordance with the active law of Ukraine, and the technical base of universities renewed, in particular in the sphere of computerization and access to the Internet.

Agricultural universities in Ukraine should become centres for the development of agricultural science as it is in the developed countries. Combination of education and research in the agrarian universities will give possibility to heave up the level of quality in these both directions. For this purpose the workload should be divided on two parts, educational and scientific.

Ukrainian Agricultural Economics should offer directions for development of the agroindustrial complex of Ukraine, formulate the bases for a new agrarian policy and a policy for rural development. This new policy can not and should not copy the Common Agricultural Policy of the European Union, the agricultural policy of USA or Canada. It should take into account Ukrainian realities and modern directions of development of world economy which are determined by the process of globalization. The main goal of this policy should be creation of a high competitive, specialized and efficient agriculture that secures an important role of Ukraine in the world agricultural markets and creates possibilities for its integration to the European Union. Criteria of estimation of the agricultural policy should be a growth of productivity and efficiency of agriculture and other connected with it industries.

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A. M. Hobets[1]
Grodno State Agrarian University, Belarus

ANALYSIS OF THE EFFICIENCY OF PORK PRODUCTION IN GRODNO REGION

Abstract. Models of pork production profitability in years 2002–2004 have been constructed and analyzed. The links between the producers of pork and zones of raw material deliveries in Grodno region have been analyzed. Dependence of the profitability of pig–breeding production on parameters most influencing it in Grodno region has been established. Some directions of raising the efficiency of the branch have been suggested.

Key words: pigs, efficiency, profitability, influence, models, analysis

Pig-breeding, both for the republic and for the Grodno region is an important branch which in conditions of market economy should become basic means of allowing not only to suspend a slump in meat production, but also to create substantially necessary food stocks for the export purposes and also to raise its economic efficiency. The Grodno region as a leader in the branch has an important role in solving the problem of producing good qualitaty and cheap products.

The purpose of the reported research was to analyse the mutual relations between the meat-packing plants and their supply zones in the districts of Grodno region and also the influence of dynamic changes in some factors on the level of profitability in pork production.

Let us group the districts in Grodno region according to the level of profitability of pork production.

[1] MA, doctoral student

Table 1. Profitability of pork production in the districts of Grodno region, %.

District	Year					2004 / 2000, + -	2004 / 2003, + -
	2000	2001	2002	2003	2004		
Slonim	18.30	9.26	9.84	9.62	26.68	8.38	17.06
Grodno	28.58	30.58	35.16	25.44	22.60	-5.98	-2.84
Corelychi	35.48	22.86	20.89	16.57	19.25	-16.23	2.68
Berestovitsa	8.96	16.48	22.21	15.99	18.79	9.83	2.80
Dyatlovo	12.55	4.68	4.59	11.13	4.62	-7.93	-6.51
Total I group	**18.42**	**15.84**	**16.23**	**14.55**	**17.63**	**-0.79**	**3.08**
Novogrudok	-20.61	1.61	24.01	8.13	18.69	39.30	10.56
Schutchin	-9.22	-16.59	-3.20	-5.95	15.37	24.59	21.32
Ostrovets	-11.92	3.44	6.95	11.39	9.65	21.57	-1.74
Voronovo	-28.16	0.74	-1.37	-0.95	7.11	35.27	8.06
Oshmiany	1.02	-6.33	-1.87	-8.84	4.70	3.68	13.54
Mosty	21.45	-1.91	4.83	7.94	4.06	-17.39	-3.88
Total II group	**-7.21**	**-3.22**	**3.79**	**1.83**	**9.56**	**16.77**	**7.73**
Svisloch	-7.16	-14.39	-16.61	-13.70	-3.61	3.55	10.09
Zelva	-11.00	-5.93	-22.35	-18.16	-4.31	6.69	13.85
Volkovysk	-17.55	-5.54	-3.12	-10.01	-4.59	12.96	5.42
Ivie	-0.17	-16.86	-22.11	-24.26	-13.99	-13.82	10.27
Lida	-34.47	-27.05	-33.45	-32.64	-20.66	13.81	11.98
Smorgon	-5.10	—	—	-34.60	-25.71	-20.61	8.89
Total III group	**-12.67**	**-13.25**	**-18.62**	**-20.31**	**-11.68**	**0.99**	**8.63**
Sum total	**276**	**3.94**	**8.44**	**7.77**	**13.31**	**10.55**	**5.54**

From the data of table 1 it is visible that all districts of the Grodno region can be broken into 3 groups: profitable, unprofitable and 'unstable'. The most efficient pork producing agricultural enterprises in the Grodno region in 2000 through 2004 were located in the Grodno, Corelychi, Slonim, Berestovitsa and Dyatlovo districts. In considered years this production in these districts was never unprofitable, and in 2004 the level of profitability was respectively 22.6 %, 19.25 %, 26.68 %, 18.79 % and 4.62 %. As a whole the pork production in Grodno region in the analysed period became more efficient, to what a growth of the profitability level from 2.76 % up to 13.31 % testifies.

The analysis of the raw material supply zones for the meat-packing plants in Grodno region has shown that districts, where the pork production for last years is stably profitable, delivered to the Grodno and Slonim meat-packing plants, like the Grodno and Berestovitsa districts to the Grodno meat-packing plant, and the Slonim, Dyatlovo and Corelychi districts to Slonim.

It is known that the production efficiency influences the profitability as an internal (the purchase price of meat, live weight) and external factor (the costs of delivery of raw material to meat-packing plants). We shall consider purchase of raw material by meat-packing plants on the example of the Grodno region.

Table 2. Categories of pigs purchased by the meat-packing plants in Grodno region in 2005.

Meat-packing plant	Category										**Total**	
	I		II		III		IV		out of standard			
	live weight, t	%	live weight, t	%	live weight, t	%	live weight, t	%	live weight, t	%	live weight, t	%
Volkovysk	649	4.4	8672	58.4	5477	36.9	21	0.1	43	0.3	**14862**	**100**
Grodno	725	5.9	7977	65.4	3257	26.7	193	1.6	51	0.4	**12203**	**100**
Lida	17	0.6	1918	70.1	709	25.9	36	1.3	55	2.0	**2735**	**100**
Slonim	2	0.1	5178	58.7	3312	37.5	319	3.6	2	0.1	**8813**	**100**
Oshmiany	171	5	2048	59.8	1144	33.4	60	1.8	----	----	**3432**	**100**
Grodno region	**1564**	**4**	**25793**	**61.4**	**13899**	**33.1**	**629**	**1.5**	**151**	**0.4**	**42036**	**100**

Meat-packing plants in the Grodno region produced 1564 t of pork of the Ist category and 25793 t of the IInd category in 2005, that means 3.7 % and 61.4 % respectively. I and II categories in the Grodno and Slonim meat-packing plants had a share of 71,3 % and 58,8 % in the structure of processed meat while their share in regional output was 29 % and 21 % respectively.

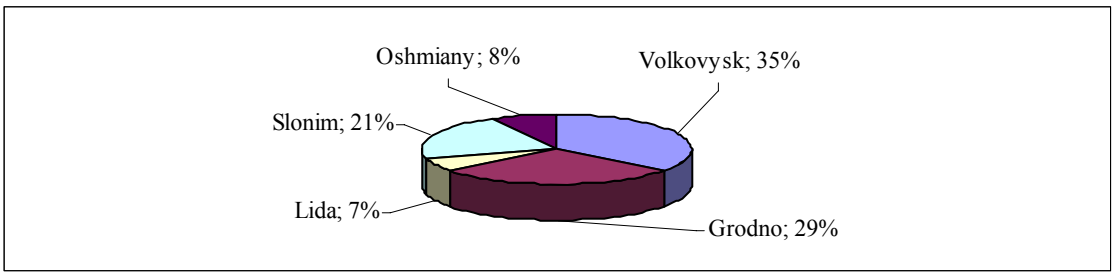

Figure 1. Distribution of pork production between the meat-packing plants in Grodno region.

Profitability of production is determined by the input prices, quality and by the sale price of the produce. The average sale prices of 1 ton of pork in the three groups of districts were: I group 2.32 million roubles, II group 2,33 million roubles and III group 3.45 million roubles. The average sale price is highest in the IIIrd group. Thus, it is visible that the average prices of realization do not speak yet about the production efficiency as a whole.

The lowest purchase price of 1 ton of realized production were in the Slonim, Grodno and Corelychi districts: 1.83 million roubles, 1.88 million roubles and 1.92 million roubles respectively.

The analysis of raw material supply zones of meat-packing plants in the Grodno region has shown that:

1) There are 3 groups of plants from which the third group is unprofitable and requires radical administrative decisions.

2) In spite of the presence of state standards for the establishment of the price for raw material there are serious distinctions in their definition in various meat-packing plants.

3) There exists an essential difference between the average sale price and the purchase price in the districts of the Ist group that may testify of a different quality of raw material.

4) Meat-packing plants pursuing a policy of price control are not interested in their increase that affects the profit for suppliers of raw material.

In a production system the agricultural enterprises are always in the least favourable position. It is important to define what to the greatest degree influences the efficiency of pig production and due to which factors it really may achieve an increase of profitability.

According to the statistical reports a grouping of farms based on a production parameter has been done, a regression model of profitability set up and a comparative analysis of changes between 2002 and 2004 executed.

Production parameter (Y) in model is the level of profitability of pig production and as factors the following variables have been taken:

x1- the purchase price of 1 ton live weight of pigs, million roubles,

x2 - daily average gain in weight, g/day,

x3 – forage consumption per 1 head, quintals of fodder units/head of animals,

x4 - labour input in production man-hours/ton of live weight.

For revealing the connections between the production factors and the abovementioned production parameter and for a qualitative consideration of the character and the form of these connections a grouping of enterprises based on a level of profitability (table 3) is used.

Table 3 proves that a growth of the level of profitability is caused by a decrease in the purchase costs of a gain in the live weight, by an optimisation of the feeding level and also by a decrease in labour inputs of production. The group 1 is composed of the greatest number of enterprises (27) with an average unprofitability of –27.48 %. In group 5 with an average profitability of 35.18 % there are only 8.

For confirmation of the revealed connections and the analysis of the occurred changes in the analysed years a correlation analysis has been performed.

Table 3. Grouping of pig-breeding enterprises in Grodno region on a level of profitability (unprofitability) in 2004.

Group number	Range of the level of profitability in group, %	Number of enterprises	Average level of profitability (unprofitability), %	Price of 1 ton live weight of pigs, million roubles	Daily average weight gain, g	Fodder use, fodder units/head in the herd	Labour input in production, man-hours/ton
1	less than -15	27	-27.48	2.85	360	14.00	45.63
2	-15 -- 0	18	-7.86	2.32	389	10.80	18.83
3	0 -- 15	15	7.29	1.98	413	11.59	13.51
4	15 -- 30	13	23.39	1.88	466	10.75	11.51
5	more than 30	8	35.18	1.57	480	10.20	10.03
Total		81	-3.23	2.37	375	12.77	29.62

The following models have been estimated:

$$2002\ г: \tilde{Y}_0 = 54{,}4907 - 25{,}305x_1 + 0{,}0179x_2 - 0{,}9966x_3 - 0{,}2254x_4;$$
$$2004\ г: \tilde{Y}_1 = 32{,}4399 - 18{,}2718x_1 + 0{,}0794x_2 - 1{,}5555x_3 - 0{,}0772x_4.$$

Pairs of correlation coefficients testify that the closest connection exists between the purchase price of 1 ton live weight of pigs and the level of profitability (in 2002 $r_{YX1} = -0.84$, in 2004 $r_{YX1} = -0.79$). Then closely the connection between the labour input and 1 quintal of live weight gain ($r_{YX4} = -0.67$ and $r_{YX4} = -0.65$ respectively) follows. Positive connection exists also between the level of profitability and the daily average gain of live weight (in 2002 $r_{YX2} = 0.53$, in 2004 $r_{YX2} = 0.50$). Weaker connection is observed between a level of profitability and the forage consumption per 1 head. With an increase in the purchase price of 1 ton live weight, the forage consumption per 1 head and also in the labour input in production the efficiency of pig production is reduced. Thus, in the analysed years there were essential changes.

Table 4. Model characteristics of profitability (unprofitability) of pig production.

Variable	Average value of variables		β coefficient		Coefficient of elasticity		Coefficient of partial determination	
	2002	2004	2002	2004	2002	2004	2002	2004
x_1	1.932	2.368	- 0.682	- 0.559	7.074	13.375	0.571	0.433
x_2	358.132	374.395	0.060	0.313	- 0.925	- 9.195	0.031	0.153
x_3	11.645	12.771	- 0.102	- 0.241	1.679	6.141	0.028	0.097
x_4	32.372	29.619	- 0.168	- 0.062	1.055	0.706	0.111	0.040
y	- 6.912	- 3.235	----	----	----	----	----	----
R^2	----	----	----	----	----	----	0.742	0.724

From table 4 it is visible that the influence of the two factors increased and the influence of expenses of labour and the purchase price decreased in the analysed period.

Change of profitability due to size of factors shows, how this parameter behaves due to the change of average values of the factors influencing it. Change of the production

parameter due to the size of factors can be determined by multiplication of the change in size of a given factor during the analysed years by the regression coefficient corresponding to it taken for 2002. The changes due to the efficiency of the used production factors can be determined by multiplication of the change in the regression coefficient by the average values of factors corresponding to them taken for 2004.

The average level of unprofitability of pig production in 2004 in comparison with 2002 increased due to the change of the sizes of factors by 11,24 %.

Table 5. Post–regression analysis of the causes of change in the unprofitability of pig production

Variable (factor)	Change in 2004 in comparison with 2002		
	Total change, %	Due to size of factors, %	Due to efficiency of use of factors,%
x_1	5.621	- 11.033	16.654
x_2	23.166	0.291	22.875
x_3	8.260	- 1.122	- 7.138
x_4	5.010	0.621	4.389
constant	-22.051	----	- 22.051
Total	3.486	- 11.243	14.729

It is possible to speak about a positive tendency of decrease in the loss parameter as a whole of 3.486 percent point. And, the security against the unfavourable changes in factors x_1 and x_3 included in the model is insufficient. However, as a whole the efficiency of use of the factors that had led to a growth in efficiency of 14.729 % (table 5) improved.

The greatest influence on a decrease in the unprofitability had an increase in the daily average gain of live weight of pigs. The increase in the purchase price of 1 ton of live weight of pigs led to a growth in the ratio of losses to expenses (index of profitability) of 11.03 %. This factor has a dominating influence on the economic efficiency of production.

An increase in the competitiveness of pig production, taking into consideration the analysed model for 2004, is possible by equalling the values of factors in the model to their average values in the Grodno region. The level of profitability (unprofitability) of expenses can be increased (or unprofitability lowered):

1) for enterprises of I group the loss/expenses ratio lowered from –27.48 % to –16.39 %;

2) for enterprises of II group to leave from unprofitability and achieve a positive level of profitability of 2.69 %;

3) for enterprises of III group to increase the level of profitability up to 9.98 %.

Competitiveness of production is determined on one hand by input prices and product quality, on the other by the market conditions and demand from the population. For an effective development the pig-breeding branch taking advantage of all available reserves of increase of the branch profitability and also adjusting of the volume of pork production to the opportunities of sale in the internal and external markets are basic.

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Volha Karpik[1]
Grodno State Agricultural University, Belarus

SOME PROBLEMS OF THE STATE REGULATION IN THE AGRICULTURAL SECTOR

Abstract. Some problems of the governmental regulations in the agricultural sector are discussed. Basing on experience of the developed countries some directions of increasing the efficiency of coordination of the market mechanism in the agro-industrial complex and state support of this complex a suggested.
Key words: Byelorussia, state regulation, agricultural complex

Nowadays agriculture is one the most controlled and supported by the state sectors of economy in the Republic of Belarus. In these circumstances inevitably arise questions concerning the necessity of such regulation of the national agro-industrial complex and the role of the state in it.

The states with developed market economy have a great experience in the sphere of the state influence upon the agriculture. There are essential differences in approach of these countries to the state regulation. Its forms in particular years depends on the conditions of the conduct of agriculture and also on the level of concentration of production and supply and demand for the consumers' nutrition products.

Although there are some differences in using concrete measures, all developed countries pursue the following ends:

- to support stable economic situation in agriculture, stability of the market and a definite level of the profitableness in this sphere;
- to prevent undesirable process of migration;
- to provide food safety;
- to limit surplus production;
- to help the population in adaptation to new conditions;
- to protect national market;
- to guarantee the competitive participation of the national producers in the international division of labour.

During transition to the market economy in the Republic of Byelorussia it is necessary to learn of the main tendencies and take advantage of the measures of state regulation and the control system of nutrition in the economy of developed countries.

The system of the state regulation should include two parts: the state coordination of market mechanism in the agro-industrial complex and the state support of agriculture.

[1] Email: milon81@bk.ru.

The coordination of market mechanism in the agro-industrial complex by means of the development the infrastructure of the market includes the following methods:

- development of production infrastructure in agriculture;
- perfecting of the marketing system, the information system, the consulting system.

All states stimulate the development of production and non production infrastructure, the transportation network and the system of electricity supply for agro-industrial production and also warehouses and storehouses.

Forming of a consulting system for the subjects in the agro-industrial sector is an effective method of development the market infrastructure. The most interesting for learning and practical using is the Danish experience. There is a professional consulting service dealing with agricultural and economic questions in this country. The owners of this service are the farmers.

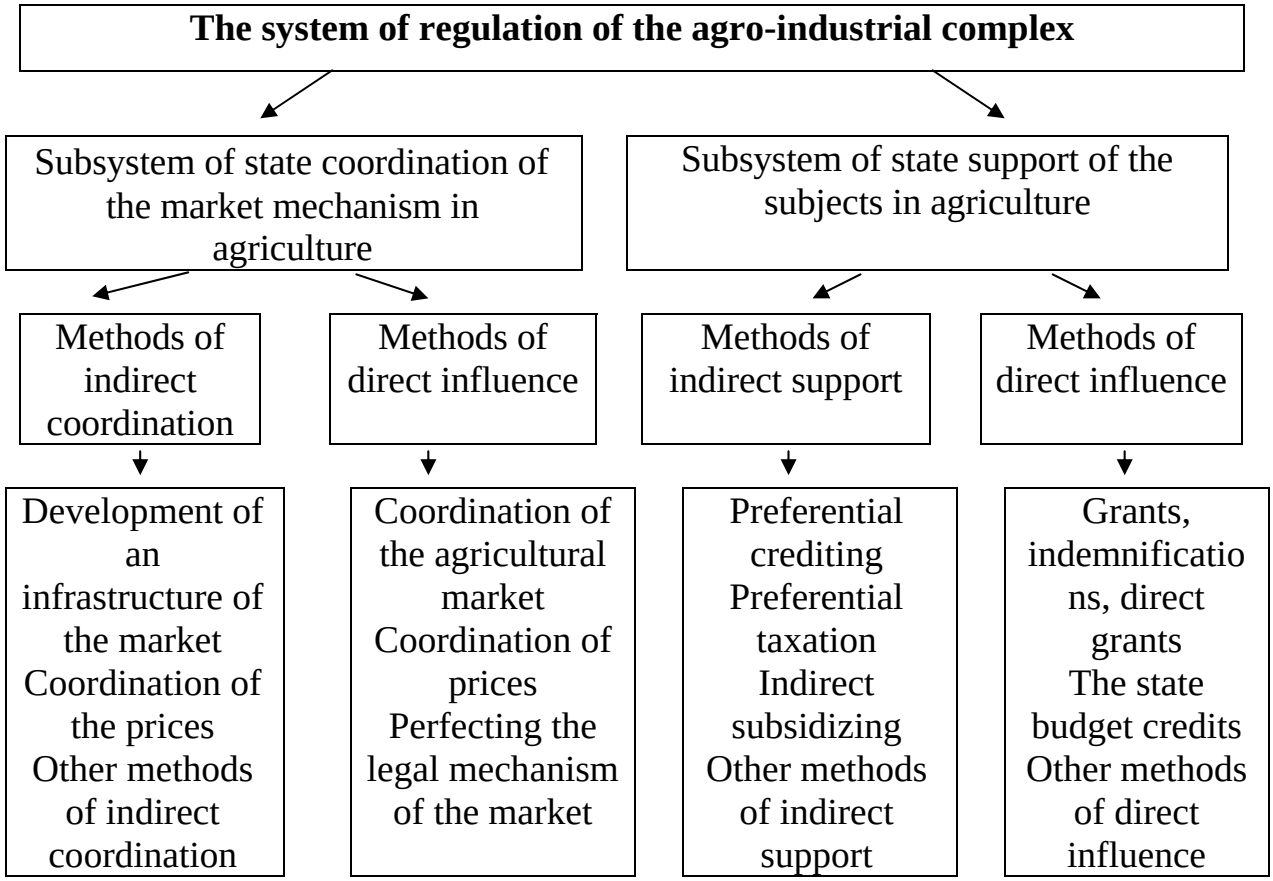


Figure 1. State programme of revival and development of villages in years 2005-2010 and the annual financing of priority directions of agricultural development as stipulated by manufacturers.

The price coordination in the agricultural production can be realized through a direct price establishment or through an indirect influence. The main methods of the price

coordination are the following: establishment of fixed, guaranteed, special, mortgaged and other kinds of prices.

Efficient price policy for the agricultural products is an important instrument of regulation of the agro-industrial complex. In the price policy it is necessary to follow the best world experience. It appears that even highly developed countries control the major part of the prices for nutrition. In Canada 78% of the agricultural products is under state price control. A system of guaranteed purchase prices for some products is operating there.

The methods of coordination of the agricultural market are the following: interventionist purchases of goods, pawning operations, establishment of quotas and regulations of the customs duty.

In some countries of the EU, in Canada, in USA and in other countries the establishment of quotas on production of some goods allows for avoiding overproduction.

However, using such mechanism as the interventionist purchases in a country with the economy in transition is rather difficult because of the insufficient security of the population with some products and the low level of income.

The experience of various countries shows that using of a customs – duty systems influences positively the development of a national market both in the developing countries and in the countries with the economy in transition, but only if their application is economically substantiated. So, in the EU the import customs – duty help to level up the prices of the imported and domestic products. It ensures the competitiveness of the European products. The mechanism of the customs – duty has a certain protective effect against the imports only if it is reasonably used.

The most important instrument of the state influence on the agro-industrial complex is the creation and development of a legal mechanism regulating its subjects' activities.

So, it is necessary to study the legislative deeds of the developed countries concerning agriculture with the purpose of improving the national law mechanism.

The most important level of regulation of the agro economy is the favourable crediting with the purpose of ensuring the optimal conditions for the subjects which have not enough own or loan capital.

The system of taxation plays a great role in the regulation of the state support of producers.

Among the countries of the East and Central Europe Hungary has the most flexible and effective taxation policy. The main criterion for taxation is profit and in order to achieve profitability various countries use such methods of support as direct and indirect subsidizing.

The direct state subsidies support the level of income of the producer. This principle is the base of the common agricultural policy of the EU.

Some years ago subsidizing was only a measure for stimulating production and was used because of the necessity of this production.

At present time many countries use the indirect measures with the purpose of subsidizing the farmers like the import regulation etc.

The system of the agro-industrial complex does not include only these elements. In foreign countries there are some other methods of influencing the agro-industrial complex, which need more detailed learning and analysis of their effectiveness.

The market relations are rather not developed in the Republic of Belarus and that is why the state coordination of the market mechanism in the agro-industrial complex works not so well as the state support of the subjects in this complex. But it has some deficiency.

It is necessary to realize the following features in the development of the agro-industrial complex in order to raise the effectiveness of the state coordination of market mechanism:

- creation of the two-level consulting system for the subjects of the agro industrial complex;
- mastering the instrument of the purchase price intervention because it should aim at a system of the state purchase of the main socially significant products at a minimal purchase price;
- using not only purchase but also food prices intervention with the purpose of the ensuring stable situation in the agricultural market.

There are also some problems in functioning of the subsystem of the state support of subjects in the agro-industrial complex which should be eliminated in the future.

The budgetary support of the agro-industrial complex is realized by means of the republican and local budgets, the republican fund of the support for the producers of the agricultural and food products, the local special – purpose funds of the stabilization. In the last years such kind of financing comes up to 10 - 12% of the expenses of the consolidated budget or 3 – 4% of the gross national product. It is rather an essential loading on the budget.

The ‘State programme of the revival and development of the village for years 2005-2010’ is where means are provided for the annual financing of the priority directions in the agricultural production development (figure 2).

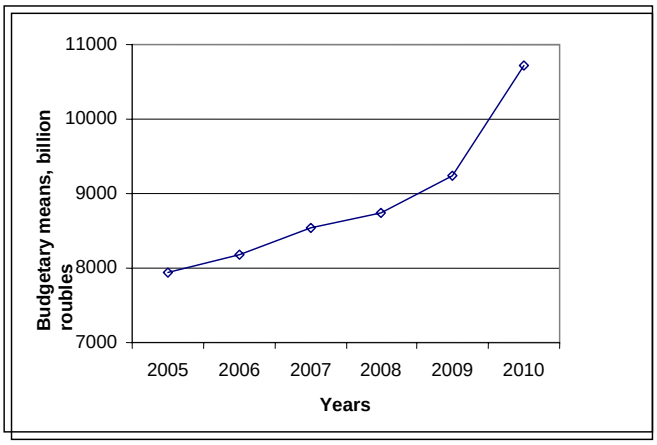


Figure 2. Means direct to the development of the agro-industrial complex in years 2005-2010

Nowadays about 120$ USD are allocated for 1 hectare. But the present system of the state support of agriculture is rather not effective and does not stimulate the keeping of the profitable production. In practice there is a compensative – expended method in the distribution of the means.

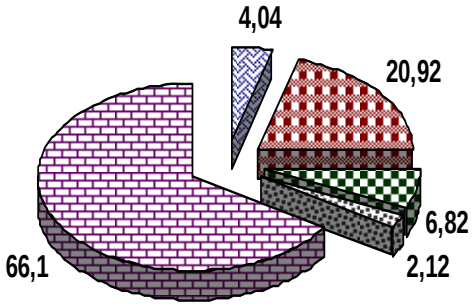
Sometimes the farms that use the resources ineffectively get a large subsidy. It does not contribute to increase production and decrease expenses.

Financing producers without taking into account the conditions of management inevitably dissipates budget means and reduces their efficiency. At the same time a concentration of the means of state support for the benefit of economically strong agricultural organizations contradicts a task of the restoration of profitability for the producers.

Besides it is necessary to take into account the future membership of Belarus in the World Trade Organization. A condition of entry into this organization in the agricultural sphere is the resignation of budget assignments for subsidizing the exports and putting restrictions on the level of state support for agriculture.

That is why the rational use of the budget assignments directed to agriculture is very topical today. The increase of feedback from them causes the necessity of developing of an effective mechanism of the state support of the branch. The realization should be carried out on a legislative basis and the support be distributed to the ailing agricultural organizations having the right to take the receipts.

In the budget financing the largest part is distributed by means of a republican fund of support of the manufacturers of agricultural products and foodstuffs and agricultural enterprises. This fund is annually distributed to particular areas and between the agricultural organizations of the republic.



- subsidies
- payment of the instalment on the loan granted by the Central Bank of the Republic of Belarus and securities
- current transfers
- investments in fixed capital
- investments in transfers

Figure 3. The use of the resources of the republican fund of support for the producers of agricultural products, foodstuffs and agricultural science in 2006

Figure 3 shows that more than 60 % of the allocated means is subsidy. Now means are allocated to regions and agricultural organizations having in view volumes of production and the sales. At the same time in the countries of EU in 2005 a decision that the grants should be distributed by other principle, than earlier, was accepted. In particular the size of the selected grants should directly depend not on the quantitative factors but on the quality of the products. If a farms breaks the ecological standards, care for animal well-being, standards of quality in production of foodstuffs or the legislation on protection of work, the grants will be reduced to 25 %. So the basic condition of receiving the agricultural grants in the EU is the observance of the high standards and ecological sustainability of production.

Thereby under the present circumstances the most actual for the Republic of Byelorussia is the problem of an efficient use of the selected budgetary funds in the agricultural sector. The enterprises need scientifically grounded methods which should approach the following principles:

- the order of distribution of the state help must be efficient, comprehensible and predictable;
- the amounts of the subventions reasonably planned in time and spatial stages for areas and regions, and then for agriculture organization;

- the simultaneous account of the differences between the regions and agricultural organization both with regard to the main factors of production and its results should be realized;
- the main criterion for the distribution of means is the efficiency of their use in regions and agricultural organizations;
- the subjects should have the right to use granted to them amounts of state support at their own discretion: on the technical rearmament, renewing the revolving fund (acquisition of the mineral fertilizers and plant protection chemicals, combustible and/or lubricating material) and others;
- the agricultural producers work on the principle of the self-financing, and concrete measures of support are additional in ensuring the normal economic conditions of the management;
- within the framework of the agricultural economy the conditions for receiving of the state support for peasant farms and collective agricultural organizations should be equal;
- Algorithm of the distribution methods must meet the requirements of economic and mathematical modelling that conditionally on the provision of the corresponding software would allow to automate the payments and sharing the financial facilities.

Such methods should take into account the efficiency of the use of production potential of each region and agricultural organization, promote reduction of differences between enterprises and between territories and contribute to levelling up the economic development.

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Iwona Kowalska[1]
Chair of Humanities
Warsaw Agricultural University

FINANCING OF REGIONAL AND LOCAL PROGRAMS OF EDUCATIONAL OPPORTUNITIES EQUALIZATION

Abstract. The paper discusses difficulties connected with obtaining public fund for the realization of programs of educational opportunities equalization (competition and non-competition versions). The comparative studies have been prepared on the basis of two latest legislative solutions: program of assistance for children and youth from former State Agricultural Enterprises; regional programs of educational opportunities equalization. The article also includes the financial results of assistance forms accumulation in both competition and non-competition. The potential value of the obtained financial support highlights the threads of increasing the differences in the access to education. Promotion of the competition in the realization of the program of educational opportunities equalization will increase the existing territorial differences.
Key words: education opportunities equalization, public assistance, regional differences

Introduction

Signed by Poland in 1964, Convention against Discrimination in Education[2] has given the foundations for the implementation of programs of educational opportunities equalization. The word "Discrimination" in the understanding of the Convention means any favoritism, exclusion, limitation or promotion caused, among others, by material situation resulting in '... the partial or full limitation of the access to the education of any type'. The practical application of the Convention's provisions can be found in the legal provisions of accepted government programs. These determine the groups of the help receivers, help criteria, help forms etc. Far less frequently assessed is the level of difficulty in receiving public funds for the realization of the programs of educational opportunities equalization. This article is attempting to compare the level of difficulty in receiving public funds for the realization of the programs of educational opportunities equalization depending on the type of the procedure: competition and non-competition. The comparative analysis has been undertaken on the example of two latest legislative projects: 'The program of assistance for children and youth from the former State Agricultural Enterprises' [PGR] and the regional programs of educational opportunities equalization. This article presents also the results of the financial accumulation of material assistance forms received via the competition and non-competition procedure. The level of the social encumbrances may stimulate research on the efficiency of financial inputs for this purpose in the public sector.

[1] PhD, email: kowalska@alpha.sggw.waw.pl.
[2] Dz. U. [*Journal of Laws*] 1964, no 40, item 268.

Competition procedure

Invitation for tenders is a more and more frequently used method of receiving bids for financial funds within the program of educational opportunities equalization. These procedures guarantee granting the funds only to the beneficiaries whose applications are recommended for subsidizing. In this situation the possibility of receiving funds is not determined by a final beneficiary's difficult situation but by the efficiency of the parties authorized to file the applications (territorial self-government units and public benefit organizations). This pro-competition procedure attitude requires:

- extensive knowledge of who organizes the competition, where and in which field;
- making a decision to take part in the competition and appointing people responsible for the preparation of the application;
- professional preparation of the application resulting in a good formal and legal assessment that will be a basis for the recommendation of the application;
- guarantying an appropriate level of own funds in the total costs of educational project realization.

In the competition there is a necessity of the recognition of winners. This situation results in a differentiation of the level and the scope of provided educational assistance. Consequently, this causes the increase of the differences in the access to educational services among people in a difficult economic situation. The threat for the realization of the educational opportunities equalization program may be observed on the example of the state program of supporting the foundation and realization of the regional and local programs of educational opportunities equalization for children and youth in 2006 'Activation and support of territorial self-government units and non-governmental organizations in the scope of providing school children with educational material assistance'.

Competitions for assistance from the regional and local programs of educational opportunities equalization are organized by a provincial governor on the basis of the Regulation of the Council of Ministers of 28 March 2006 establishing the details of financing regional and local programs of educational opportunities equalization for children and youth in 2006, requirements that shall be met by the programs, bodies evaluating the programs and the method of the selection of the programs to be subsidized[3]. Invitations to competitions include the following information:

[3] Journal of Laws no. 59, item 411

1. An example of the application with a fill-in guide. Governors do not have strict restrictions in this area. In accordance with the provisions of the abovementioned Regulation the application should contain the following:

   1) a program with an explanation, aim and form of the program realization and expected results;

   2) program launch and completion dates;

   3) the scope of undertaken actions aiming at the educational opportunities equalization for children and youth;

   4) a detailed description of activities;

   5) costs calculation, including information on:

      a) financing sources,

      b) the amount of the expected subsidy,

      c) income and costs structure;

   6) information on the program's compliance with a regional or local education policy.

   For example, an application form was very simplified in Dolnośląskie province. It included only six abovementioned topics. However governors were in the right to prepare more sophisticated application form using e.g.:

   - an example of an offer for public task realization[4],

   - EU funds application generator.

   The differentiation of the application fill-in difficulty level could result in a differentiation of chances to obtain funds for the realization of programs of educational opportunities equalization.

2. Time for filing an application up to April 28, 2006 (one month after issuing the regulation). Setting such a short period of time might promote bodies with a project concept prepared in advance (e.g. for another competition). Governors did not issue the information about an example of application form simultaneously. Consequently the actual time for filing an application varied across the country. Failing to meet the time limit could result in the exclusion from the competition procedure. Complaints of potential applicants resulted in the extension of the period to May 15, 2006 (amendment to the Regulation[5]).

3. Time for reviewing applications up to May 12, 2006 (and extended to May 26, 2006 because of the filing period extension).

[4] Journal of Laws 2005 no. 264, item 2207.
[5] Journal of Laws 2006 no. 73, item 503.

The governor appoints a team for formal, substantial and financial evaluation of the applications. The team determines the way of selecting programs to be subsidized. The team is obliged to evaluate the motions with a consideration of the following:

1) completeness and formal correctness;

2) substantial quality of a program (including its range and estimated results);

3) compliance with a regional or local education policy;

4) reasons for program's existence (including possibility of solving or decreasing existing educational problems and using local and regional potential);

5) justification for planned costs;

6) level of servicing costs;

7) real possibility of the program realization.

Each province could have its own system of particular evaluation criteria. Thus, this is the next element of the procedure which could differentiate the access to public funds for the realization of the program of educational opportunities equalization.

The lack of own funds could also be a major obstacle. The subsidy granted by a governor equals the amount of own funds engaged by an applicant in his program realization (1:1). Failure to dedicate funds from a budget meant no chances for the realization of the local programs of educational opportunities equalization.

The total value of the subsidies granted by a governor could not exceed the funds for financing governor's programs. This determined the level of applicants' expected own contributions. In several regions applicants' financial neeeds could exceed the subsidies granted for the province. However, this financial situation would not influence the increase of the tasks co-financed by the state budget.

Introduction of the competition for receiving public funds stimulates creative attitude at the local level. However in the realization of the program of educational opportunities equalization this method causes the division of potential beneficiaries into two groups: receiving state's help and not receiving the help.

Non-competition procedure

The non-competition realization of the program of educational opportunities equalization eliminates the risk of exclusion from the group of final beneficiaries. With this method public funds redistribution better fulfills the idea of educational opportunities equalization. The state program of subsidizing students from the families of the former

employees of State Agricultural Enterprises[6] may illustrate this statement. In this case the potential beneficiaries of the subsidy may not receive it only because of their own negligence. Here only filing simplified set of necessary documents within a settled time limit decides on the scholarship granting. The only real difficulty might be the potential beneficiaries' lack of knowledge on the possible forms of support. However even this risk is significantly reduced by a large group of applicants with the right to name candidates for a scholarship. Apart from parents the representatives of the following institutions are also the applicants:

- schools attended by a student: headmaster, teachers;
- social assistance institutions: social worker;
- other persons.

Difficulties in meeting requirements are often considered inadequate to the amount and form of the offered support. The scholarships for children and youth of the former employees of State Agricultural Enterprises seem to negate this common attitude.

Meeting the requirements of applying for the scholarship is not troublesome. The criteria include:

1) the financial situation of the student's family: the income per one person in the family must not exceed 532 PLN (on the basis of parents' statements from the last three months);

2) the student's place of residence: living in a village or in a town up to 20 000 inhabitants;

3) being a member of a family of the former employees of State Agricultural Enterprises;

4) certifying the continuation of education in a post-intermediate school enabling receiving a baccalaureate certificate;

5) granting a scholarship at least for year 2005 by the Agricultural Property Agency to December 31, 2004.

Collecting the necessary documents is also simple:

1. Filling in an application (obligatory information: student's name and last name and his/her parents' names and last names, place of residence, name and address of student's school, description of the expected form of a scholarship);
2. Attachments to the application:
   - financial statement of student's family,

[6] Dz. U. of 2006 Nr 73, poz. 502

- acknowledgment, decision or any other document confirming granting a scholarship of Agricultural Property Agency for at least 2005. If it is impossible to present such a document the school superintendent issues a certificate confirming the granting of the scholarship by the Agricultural Property Agency.

The deadline for filing scholarship applications was May 22, 2006. Any delay in filing the application does not deprive a beneficiary of the scholarship. In properly justified situations it is possible to file the application after the deadline.

This form of help is attractive because of:

- the form , amount and frequency of payments;
- description of the scholarship aim;
- the period of scholarship granting;
- convenient administrative servicing of the scholarship.

The scholarship may have the following forms:

1) direct coverage of the expenses related to education;

2) allowance, after proving the expenses related to education.

A student may receive the amount of 50 PLN as pocket money payable beforehand to the 10th day of each month. The scholarship is granted for the time until the graduation from a post-intermediate school enabling to receive a baccalaureate certificate (not longer than to June 2008). The scholarship is granted from September to June in each school year. The scholarship may be realized in periods other than months. Graduates who in the school year 2005/2006 have finished post-intermediate school enabling to receive a baccalaureate certificate are the only exception. In this situation the subsidy is payable in a lump-sum in cash before June 23, 2006. The subsidy is for a partial or complete coverage of the expenses related to education, in particular:

1) food,

2) dormitory payments,

3) transport to school,

4) school books,

5) necessary clothes and shoes,

6) foreign languages lessons and other classes conducted in the school or out of it and school trips.

The amount of the scholarship is 200 PLN monthly, but the total amount of the scholarship in a school year must not exceed 2000 PLN (for comparison a social scholarship is 44.80 – 112 PLN monthly). The scholarship is granted by the student's school (if it is

managed by district educational authority). In the remaining cases the scholarship is granted by a district starost appropriate for the school. It is worth mentioning that receiving the scholarship is guaranteed up to 2008.

Financial consequences of the accumulation of support forms in educational opportunities equalization programmes

Presently are functionning in Poland several programs of educational opportunities equalization that are financed or co-financed by the state budget. The calculations presented below are examples of accumulation of support forms ensuing from the right to receive scholarships from different sources: school, EU, former State Agricultural Enterprises and within local or regional programs of educational opportunities equalization. Additionally the scholarships have been extended by two more forms of material assistance determined by:

- the state program of school starting conditions equalization "School starter kit"[7];
- the Law of November 28, 2003 on family benefits[8] (supplements to child allowances).

The calculations consider three educational stages of the beneficiaries:

- I: classes: 1-3 of elementary school;
- II: classes: 4-6 of elementary school;
- III: classes: 1-3 of junior high school

and post-intermediate school education.

The financial results of assistance forms accumulation in elementary school vary depending on the age of the beneficiary:

Class 1: social scholarship, school starter kit, supplements to child allowance, regional scholarship.

Expenses: 1) the social scholarship (minimal amount: 10 months x 44.80 PLN = 448 PLN; maximal amount: 10 months x 112 PLN =1120 PLN);

2) the school starter kit (material assistance in the school books purchase up to the amount of 100 PLN);

3) the supplement to child allowance for the beginning of a school year (single payment of 90 PLN);

4) regional scholarship (approximately 50 PLN monthly x 10 months = 500 PLN).

Total expenses: from 1138 PLN to 1810 PLN (yearly).

Classes 2-6: social scholarship, supplements to child allowance, regional scholarship.

[7] Journal of Law 2005 no. 69, item 611
[8] Journal of Law 2003 no. 228, item 2255 as amanded

Expenses: 1) the social scholarship (minimal amount: 10 months x 44.80 PLN = 448 PLN; maximal amount: 10 months x 112 PLN =1120 PLN);

2) the supplement to child allowance for the beginning of a school year (single payment of 90 PLN);

3) the regional scholarship (approximately 50 PLN monthly x 10 months = 500 PLN).

Total expenses: from 1038 PLN to 1710 PLN (yearly).

The financial results of assistance forms accumulation on junior high school level in comparison to the elementary school level (classes 2-6).

The financial results of assistance forms accumulation on the post-intermediate school level: social scholarship, supplements to child allowance (2), EU scholarship, regional scholarship, scholarship for former State Agricultural Enterprises.

Expenses: 1) the social scholarship (minimal amount: 10 months x 44.80 PLN = 448 PLN; maximal amount: 10 months x 112 PLN =1120 PLN);

2) the supplement to child allowance for the beginning of a school year (single payment of 90 PLN);

3) the supplement to child allowance for undertaking education in a school out of the place of residence (10 months x 40 PLN = 400 PLN or 10 months x 80 PLN = 800 PLN);

4) the EU scholarship (10 months x 250 PLN = 2500 PLN);

5) the regional scholarship (10 months x approximately 50 PLN = 500 PLN);

6) the scholarship for former State Agricultural Enterprises (10 months x 200 PLN = 2000 PLN).

Total expenses: from 5938 PLN to 7010 PLN (yearly).

Public funds channeled for the realization of the programs of educational opportunities equalization constitute an important part of public funds sector transfers. In both macro and micro scales the results of the expenses shall be tangible. The method used for obtaining these public funds shall stimulate the effects of the funds. Unfortunately the introduction of competition method may not only fail to equalize the educational opportunities but also differentiate them territorially.

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Volha Kretskaya[1]
Grodno State Agrarian University, Belarus

PROCESSES OF CONCENTRATION AND COOPERATION IN THE DAIRY SUBCOMPLEX

Abstract. The future of dairy branch belongs to major concerns producing milk, in which high parameters of milk yields are achieved and wider opportunities for modernization of production exist. Indisputable advantage of scale enjoyed by large production units over the small-sized ones is an objective law which has world recognition. Besides when reforming the branch it is necessary to create a range of large corporate enterprises which will be based on modern market relations and various forms of management. Various cooperation-integration structures are being created in the republic today. They unite several enterprises within the limits of one area, and the interregional and republican specialized complexes both.

Key words: milk production, economic efficiency, Byelorussia

One of the main tasks of the state is to provide the population with foodstuffs. Strategy of social and economic development of the Republic of Belarus requires the development of conceptual bases of formation of the national markets for foodstuffs with allowance for the main internal and external interests of the state. The resolution of the food problem is still one of the basic priorities of the government of the country. Effective functioning of agriculture is possible only in the event that all its branches achieve significant successes in the development. In the last years an economic stabilization of agriculture as a whole and of its separate parts (subcomplexes) has been planned. One of the components of agricultural and industrial complex is the dairy subcomplex which provides the population with important and irreplaceable foodstuffs.

Milk and dairy products are an integral part of each person's diet, being present daily on the table in each house. According to the medical dietary standards one person should consume annually 380 kg of milk and dairy products [Ekonomika… 1996, p. 218]. In Belarus this parameter in the last 5 years varied between 268 kg. and 302 kg. of milk and dairy products, though the production of milk per capita exceeds this quantity (figure 1).

[1] MA, doctoral student, email: kretskaya@yandex.ru

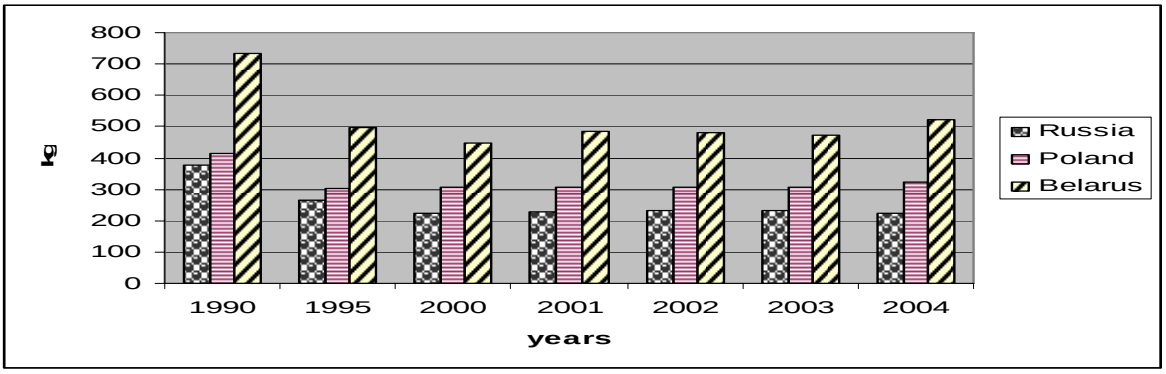

Figure 1. Dynamics of milk production per capita.

Producing more than 5 million tonnes of milk a year Belarus completely meets the country needs for dairy products and has an opportunity of an expansion on the foreign markets.

As milk and dairy products are one of the major foodstuffs, they should be accessible to all sections of the population. It assumes low enough cost of dairy products. Reduction of the price on milk is possible only with an effective functioning the dairy subcomplex and first of all dairy cattle breeding as a supplier of raw material.

One way of improvement of functioning of the dairy branch is the deepening of its concentration. Grouping of agricultural enterprises in the Grodno region by a mid-annual number of heads in the dairy herd testifies to it (table 1).

Table 1. Grouping of the agricultural enterprises in the Grodno region by a mid-annual number of cows in the herd, in 2003-2005.

Group	Mid-annual number of heads in the cow herd	Number of firms	Yield of milk, kg/cow/year	Expenses on 100 kgs of milk		Level of profitability, %
				forage, quintals of fodder units	labour, manhours	
1	below 400	33	2674	1.27	7.2	2.8
2	401-600	78	2881	1.21	6.6	7.5
3	601-800	64	2946	1.24	6.3	9.4
4	801-1000	28	3703	1.09	4.8	20.8
5	1001-1500	18	3666	1.09	5.2	19.1
6	more than 1501	6	5220	0.98	2.8	51.2
Average		227	3306	1.16	5.6	15.8

According to the data in table 1 it is clear that the production efficiency of milk depends on the size of the herd. It is visible that the best parameters of development of dairy cattle breeding are observed in those enterprises where the scale of operations is larger. According to table 1 a number of positive tendencies can be observed with an increase of the mid-annual number of livestock in the herd, among which an increase of efficiency of the dairy herd, a

reduction in the expenditure of forages and labour per unit of production and also an increase of the level of profitability of milk production.

It is necessary to create enterprises, where the mid-annual number of livestock is more than 1500 heads. In these farms the least labour and forage input per unit of production (2.8 man-hour and 0.98 quintals of fodder units) is observed. They also have the best milk yield per cow (5220 kg annually) and economic efficiency in the branch. In 2004, for example, the level of profitability of milk production in these enterprises reached on the average 56,2 %.

Witt a concentration in the branch grows as well a controllability of production and the problem of labour organization on a high level is better solved. The following data testify to the benefit of concentration of dairy cattle breeding. About 5.5 thousand milkmaids work in the Grodno region. They serve 168 thousand cows. It means that one milkmaid serves 30 cows. It is about 10-20 times less than, for example, in an agricultural production cooperative "Oktiabr - Grodno". This enterprise is included in the sixth group by amount of cows. Application of new technology and progressive methods of dairy cattle breeding yield good results.

Research results show that the most advanced enterprises in milk production are those which first adopted new technologies. The timely reconstruction of dairy farms has allowed them to essentially lower the losses in milk production and to make profits in this branch earlier than in the other enterprises. Now in such enterprises a big number of dairy cattle is concentrated and also the best parameters of development of dairy cattle breeding are achieved.

Indisputable advantage of large scale production over a small-sized one is an objective economic law which has a world recognition. Besides during reforming the branch it is necessary to make functioning of the large corporate enterprises be based on the modern market relations and various forms of management.

Preconditions for inter-firm economic cooperation are specialization and concentration; they are primary in relation to it. If the inter-firm economic cooperation does not remain passive it actively influences deepening of specialization and increase of concentration by involving even more and more enterprises in this process, by expansion of interrelations and forms of co-operation between them and by a concentration of capital and creation of co-production.

If the level of specialization is low farms offer a small supply of commodities, so there is no material basis for production ties between them and, consequently, for cooperation. Such economy will experience difficulties in the development of all branches on a modern engineering - technological basis, and inevitably will result in their backlog and a decrease of efficiency.

Various cooperation-integration structures are created in the republic today. They unite some enterprises within the limits of one area, and also into both interregional and republican specialized complexes.

At the regional level it is expedient to develop a deepening in kind specialization of the agricultural organizations, a concentration of production, a rational division of labour and location of branches for the purpose of the best adaptation of agriculture to the local conditions and of more productive and effective utilization of resources. It is required to carry out mechanisms of inter-firm economic agro-industrial cooperation and integration, a selection of enterprises – integrators. Also there is a need of formation of raw material supply zones and specific product cooperation-integration associations, including the agricultural enterprises and manufacturers processing the initial raw material as well as the marketing and distribution firms and in some cases financial structures.

Enterprises - integrators are meant to become large agricultural organizations that have cattle-breeding complexes, processing and trading - marketing enterprises. The sizes of raw material supply zones and subsequently the number and structure of the enterprises included in branch association should be defined by capacities of processing and marketing structures and the requirements of the market.

Organizational dairy subcomplex consists of:

- agricultural enterprises producing milk,
- enterprises processing milk,
- organizations selling dairy products.

The above listed parts of a dairy subcomplex today function isolated from each other. In most cases their economic interests do not coincide and sometimes they are even opposite. Processing enterprises do not participate in the formation of a raw-material base. Many problems arise during the purchase of milk especially form the peasant farms which produce 35 % of its general volume.

In such situation gain in value the questions of organizational development of a dairy subcomplex in a direction of optimization of its structure. One of the solutions to this problem is formation of the dairy agro-industrial organizations. The structure of agro-industrial economic organization includes the agricultural enterprises producing milk, factories for its processing and organization trading dairy products. The income of the joint activity is distributed among

participants with allowance for expenses in each of them in production of finished goods. It means that all economic subjects in the association work together on the eventual result.

When functioning in structures of agro-industrial dairy associations their participants receive higher economic benefit. Advantages of joint activity are a reduction of tax payments, economizing on the costs connected, for example, with the conclusion of negotiations on selling goods, an opportunity for formation of centralized funds, an acquisition of resources for realization of joint investment programs etc.

For the purpose of strengthening raw-material bases of processing factories in a dairy subcomplex a process of their integration is carried out by combining the economically solvent enterprises with unpromising ones. Thus, the last are liquidated as legal persons and their sources of raw material are transferred at the disposal of the well working subjects.

So it is possible to say that the future of dairy branch belongs to major concerns producing milk in which high parameters of milk yield are achieved and more opportunities for modernization of production exist. The use of new high technologies reduces labour inputs for service of cattle, reduces the inputs of resources for in a unit of production. This reduces the product cost and also increases the profit from its realization. The integrated structures of a regional level are capable in their turn to achieve an essential decrease in industrial costs, to react operatively to the changes of market conditions, to raise the level of capacity utilisation and the efficiency of acquisition of labour and financial resources. Cooperation reduces dependence on intermediaries, solves the problem of coordination of interests of agricultural producers, processing enterprises and trade firms, softens the disproportion between the prices for the agricultural products and the retail prices of foodstuffs. Cooperation can become one of the basic ways of increase of the level of production which does not require big investments.

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Henryk Manteuffel Szoege[1]

Marta Jóźwiak[2]

Chair of Agricultural Economics and International Economic Relations
Warsaw Agricultural University

MACROECONOMIC EFFICIENCY OF A SMALL PROVINCIAL PUBLIC LIBRARY

Abstract. The macroeconomic efficiency of a public library in a small town near Warsaw has been calculated in the form of benefit/cost ratio. The benefits have been estimated by the method of contingent valuation of the library services and by the revealed preferences expressed by the costs of travel to and from the library as well as the costs of library deposit fees. The macroeconomic costs have been assumed equal to the microeconomic costs, except for labour costs which have been estimated as social opportunity costs of labour and therefore corrected downwards because of the persistent unemployment in town. The BCR ratio turned to be far below zero (depending on assumptions varied between 0.37 and 0.76). However only the direct benefits accruing to the library customers have been included.
Key words: public library, macroeconomic efficiency, contingent valuation

Introduction

Public libraries render a set of social services [Bibliotekarstwo… 1994], which in terms of economics can be treated as a way of the human capital formation, also in rural areas. In this way they partly contribute to the development of human factor in agriculture and stay within the field of interest of agricultural sociologists and agricultural economists.

Library services in this country are so far a public good (though the ideas of their commercialisation arise [Płatne… 2005]). Therefore methods of economic valuation of these goods might be adapted from those used for valuing public goods in the environmental economics [Manteuffel Szoege 2005]. In this case a combination of the so called contingent valuation and the travel cost methods has been applied.

Contingent valuation has been used in surveying the library customers in order to determine their willingness to pay for the library services. This willingness has been taken for their individual valuation of these services, including their consumer surplus. Extra costs which they bear for getting an access to these services have been added in the form of costs of travelling to and from the library (analogous to the travel cost method in environmental economics) and the costs of borrowing the most demanded books in the library, for which a deposit fee had been established. The cost in the last case equals the opportunity cost of the own capital immobilized for some time without interest in the deposit fee.

[1] Professor, head of the chair, email: henryk_manteuffel@sggw.pl
[2] MA, email: martajoz@wp.pl

As an example of calculation of the macroeconomic (judged from the general social perspective) efficiency of a provincial library has served the case of a Municipal Library in a little town located near Warsaw. Except for its main siege it has four district branches.

Costs of the public library investigated

The cost used in calculation has been the average for years 2003, 2004 and 2005. Before averaging they had been recalculated into the 2005 price level by using as multipliers the appropriate consumer price indexes (CPI). They are demonstrated in table 1.

Table 1. Municipal library costs, PLN, price level 2005

Cost item	Year			average	%
	2003	2004	2005		
Book purchases	32 800	43 516	56 854	44 390	5.3
Materials and equipment	12 952	70 876	66 066	49 965	5.9
Electricity, water, gas and heating	29 228	31 119	32 000	30 782	3.7
Material and immaterial services	53 040	73 633	47 998	58 224	6.9
Salaries (including overheads)	682 887	618 025	625 487	642 133	76.3
Other payments	1 491	15 393	18 630	16 313	1.9
Total	825 823	852 562	847 035	841 806	100.0

Source: [Informacja... 2004, Informacja.... 2005, Informacja... 2006].

In the first estimate the macroeconomic costs were assumed equal to the microeconomic ones, basing on assumption that all prices of inputs, including labour, were free market prices and therefore reflected their social value (table 1).

On the second thoughts an amendment to this general presumption has been made by valuing the labour input at its opportunity cost.

This has been done by taking into consideration the high unemployment level of 21.6 % among women in the town, otherwise not differing much from the country average [Dąbrowska-Majewska 2005, p. 10]. The social cost of employing an unemployed person can roughly be set equal to zero, since the society does not loose his/her net productivity in the alternative employment. This loss of productivity is the true opportunity cost to the society, while the salary and overheads can be treated not as costs but just as money transfers from one part of the society to another.

The share of potentially unemployed persons in the library staff was assumed equal to the town average rate of unemployment. In this way the labour costs have shrunk to

$$642\ 133 * (1 - 0{,}216) = 503\ 432 \text{ PLN/year}$$

With this correction the total social average costs amounted to 703 106 PLN per annum.

Social value of library services

Social utility of the library services has been valued at the willingness to pay declared by the library customers.

A survey among the library customers was executed at the beginning of 2006. It covered 130 respondents. The respondents were selected according to their characteristics in such a way that the sample reflected roughly the characteristics by sex, age and occupation of the general population of customers. 80% of respondents declared a positive value for their willingness to pay.

The willingness to pay has been calculated in the case of book lending services by taking the willingness declared by particular respondents (or the average willingness in an appropriate group of respondents) as a unit valuation by a specific category of customers defined by sex, age and occupation, as they are registered in the library files. The unit valuations have been multiplied by the number of customers in a given category and then summed up for all the categories. Since the readers in the reading room are not registered by their sex, occupation and age, the same distribution among groups of customers in the reading room as the distribution of the book lending facility customers has been assumed. The value of the reading room services have been calculated by multiplying the number of visits by readers of a particular category times unit value per visit in this category.

The book lending services (table 2) and the reading room services (table 3) have been valued separately and finally summed up.

In the case that no representative for a particular category was interviewed, an average valuation from the adjacent categories was applied. For example the valuation by pupils (high school students) aged 19 years was replaced by an average valuation by pupils aged 15 to 19 years and students aged 19 to 25 years; valuation by white collar employees aged 19 to 25 years was represented by the average value estimated for students of the same age and white-collar workers aged 25 to 45 years.

Above the individual valuations of the library services also the costs of frequenting the library should have been included into their value. For this purpose the costs of travelling by car to and from the library have been calculated. This has been done by multiplying the mileage by a unit cost of a car ride set equal to the average remuneration for 1 kilometre of car travel in a business trip, reimbursed to the car owner by the state-owned institutions. If the

reader visited the library on foot no cost was calculated because of treating it as a healthy walk.

Another cost included into calculation has been the book deposit fee opportunity cost. For some most demanded books a deposit fee is required by the library and this means freezing the liquid capital in the fee. The opportunity cost of this capital has been set equal to the long term deposit rate of interest, average in the Polish banking system. For the period of investigation this rate amounted to 2.95 % [Średnie... 2005]. The real rate was calculated by excluding from the nominal rate the inflation component equal for this time to 2.2 % [Wskaźniki... 2005].

The recalculation followed the standard formula:

$$\text{Rreal} = \frac{1 + \text{Rnom}}{1 + \text{Rinfl}} - 1$$

where:

Rreal – real interest rate,

Rnom – nominal interest rate,

Rinfl – inflation rate, equal to CPI - 1.

Real rate of interest on the own capital then became

$$\text{Rreal} = \frac{1 + 0.0295}{1 + 0.022} - 1 = 0.007$$

The capital costs of book borrowing have been then calculated for individual respondents as the number of books requiring deposit borrowed per year times the deposit fee times the above rate of interest times 1/12 (one month of lease each time was assumed).

Total social value of library services being the sum of the three above components became then for the book lending services 262 567 PLN/year and for the reading room services 47 927 PLN/year which makes a total of 310 494 PLN/year. This is their value for the library customers.

Table 2. Annual value of the book lending services in the library

Calculation item	Category of customers													total
occupation	pupil		student	white-collar employee			other employment			non employed				
age (A)	15<A<19	A=19	19<A<=25	19<A<=25	25<A<=44	44<A<60	19<A<=25	25<A<=44	44<A<60	19<A<=25	25<A<=44	44<A<60	A>=60	
number of customers registered	1597	62	1295	81	1060	623	63	376	221	31	578	339	391	6717
number surveyed	29	0	29	0	25	9	2	4	6	3	7	8	8	130
Unit values, PLN														
value of annual borrowings	3.24	13.05	22.86	17.95	66.72	53.78	28.00	3.25	2.17	56.00	56.14	12.56	26.25	x
deposit fee cost	0.00	0.00	0.08	0.00	0.03	0.04	0.00	0.02	0.00	0.09	0.00	0.02	0.01	x
commuting cost	0.00	0.00	6.77	0.00	37.07	20.38	0.00	4.78	0.00	5.10	10.41	0.64	0.00	x
annual value of visits	3.25	13.05	29.70	17.95	103.82	74.20	28.00	8.04	2.17	61.19	66.55	13.22	26.26	x
Total values, PLN														
value of annual participation	5 184	809	38 467	1 454	110 048	46 226	1 764	3 024	479	1 897	38 468	4 481	10 267	262 567

Table 3. Annual value of the reading room services in the library

Calculation item	Category of customers													total
occupation	pupil		student	white-collar employee			other employment			non employed				
age (A)	15<A<19	A=19	19<A<=25	19<A<=25	25<A<=44	44<A<60	19<A<=25	25<A<=44	44<A<60	19<A<=25	25<A<=44	44<A<60	A>=60	
number of visits	947	40	769	40	632	355	40	197	118	20	355	197	237	3 947
number surveyed	21	0	28	0	6	2	1	1	2	3	1	3	0	68
Unit values, PLN														
value of visits	2.00	6.50	11.00	8.75	6.83	4.00	36.00	13.00	9.50	22.67	22.00	4.00	13.00	x
commuting cost	0.00	0.00	12.19	0.00	4.67	3.82	0.00	1.27	0.00	1.70	0.00	0.00	0.00	x
annual value of visits	2.00	6.50	23.19	8.75	11.51	7.82	36.00	14.27	9.50	24.37	22.00	4.00	13.00	x
Total values, PLN														
value of annual participation	1 894	260	17 836	350	7 271	2 776	1 440	2 812	1 121	487	7 810	788	3 081	47 927

Source for tables 2 & 3: survey

Economic efficiency

Benefit / cost ratios for several variants of costs and benefits calculation are inserted into table 4. The social costs have been estimated in two ways as explained above and the social benefits have been also estimated in two different ways. One has been described above, another one has taken into consideration that most of the customers were pupils and students who did not earn their own money and therefore can be classified as poor. Also, because of their age, they probably tend to underestimate the value of library services. Therefore, in an alternative run, the unit valuations by pupils aged 15 to 19 years have been replaced by unit valuations by white-collar workers of age 25 to 44 years and the valuations by students aged 19 to 25 years have been replaced by valuations by the white-collar employees aged 44 to 60 years. The estimated annual value of the borrowing activity then became 486 431 PLN/year and the reading room services 47.200 PLN/year which gives the total value of 533 631 PLN/year.

Table 4. Benefit / cost ratios for the library, alternative calculations

Calculation variant	BCR ratio
Social cost equal to microeconomic cost, straightforward benefits	0.37
Social cost corrected by opportunity cost of unemployed labour, straightforward benefits	0.44
Social cost equal to microeconomic cost, benefits corrected by revaluating the young people estimates	0.63
Social cost corrected by opportunity cost of unemployed labour, benefits corrected by revaluating the young people estimates	0.76

In either case the library turned out to be macroeconomically inefficient.

Discussion

The negative outcome of the calculations is no doubt saddening for the authors as well as, probably, the readers. To improve the economic efficiency of the institution in the investigated case the first idea is to cut the costs by reducing the number of branches and firing a part of the personnel. The labour costs count for three quarters of the total costs in the library (table 1). The move would probably result also in a decrease in the number of customers and all the same in the social benefits. Another possible way of action is trying to

attract a greater number of customers. In the most simple variant of calculation this would require an increase of 2.7 times, a number rather difficult to reach. In the most favourable variant an increase of 1.3 times would become sufficient. In view of the dwindling numbers of customers since 2001 [Jóźwiak 2006] a growth of this size would probably also be difficult to obtain. But in the recent times the necessity of changing the traditional role of public libraries into that of modern information extension centres has been stressed [Górska & Lewandowicz 2003; Wołosz 2002] and this might be the way of increasing the number of customers. However this would probably require also a big increase in the equipment costs.

Only a direct value of library services has been included into the calculation, i. e. the value for the library customers. We should however keep in mind that these services have also their indirect value for the rest of society, who does not necessarily frequent the library themselve. This value is connected with the recognition of the library's merits in education of the young generation and the role of the library as a cultural centre, where cultural events of various sorts, as in the case of the investigated library, take place. These events are exhibitions, lectures, discussion meetings and concerts. The role of libraries in the broader sense seems to be also appreciated by the local authorities who subsidy the libraries from their budgets.

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Dmitry Rudenko[1]
Elena Rudenko[2]
Marija Pestis[3]
Economic Faculty
Grodno State Agrarian University, Belarus

TENDENCIES IN MEAT PRODUCTION IN THE REPUBLIC OF BELARUS

Abstract. Stockbreeding is a fast growing branch of agriculture. But in modern economic conditions Republic of Belarus has many problems with it. On the contrary the countries of Europe achieved big results in meat production. In most of them branch is export oriented. The authors analyze situation in meat production in the Republic of Belarus and give their opinion thereupon. The present conditions are unfavourable and the volume of meat production is falling. It is necessary for the government to assist meat producers.

Key words: meat, production, meat products, stockbreeding, efficiency, pig breeding, pork, farms, Belarus

Introduction

Stockbreeding is the basic branch of agriculture in Belarus. But from 1990 to 2004 there were significant changes. The production of meat falls from 1181 to 630 thousand tons. The current tendency is that pork production is growing while beef and poultry production is falling. That is why it is very important to analyze modern trends of meat production in Belarus [Rudenko 2004, Shpak & Pestis 2004].

Material and methods

We studied all kinds of meat production in different agricultural enterprises. We have analyzed statistical information about meat production and stockbreeding in Belarus and compared it with different countries.

Results of research

In the years of astounding growth of the meat market in 1990 domestic production of meat and meat products in the Republic of Belarus amounted to 1181 thousand tons and import only 15 thousand tons. At the same time individual consumption amounted to 773 thousand tons and export was 348 thousand tons. Subsequently, there was a small increase in output, and then

[1] email: dvrudenko@mail.ru
[2] MSc, assistant.
[3] Dr, lecturer.

decline to 598 thousand tons in 2000. At present (2004) meat production amounts to 630 thousand tons or half the level of 1990 [Rudenko 2005].

The same negative situation can be seen in foreign trade. As it was mentioned above, in 1990 year net export was 333 thousand tons. Subsequently meat export had a sharp decline and import began to grow. Minimum export was 15 thousand tons in 1996. That year import exceeded 4 thousand tons for the first time. In 2004 meat export amounted to 120 thousand tons.

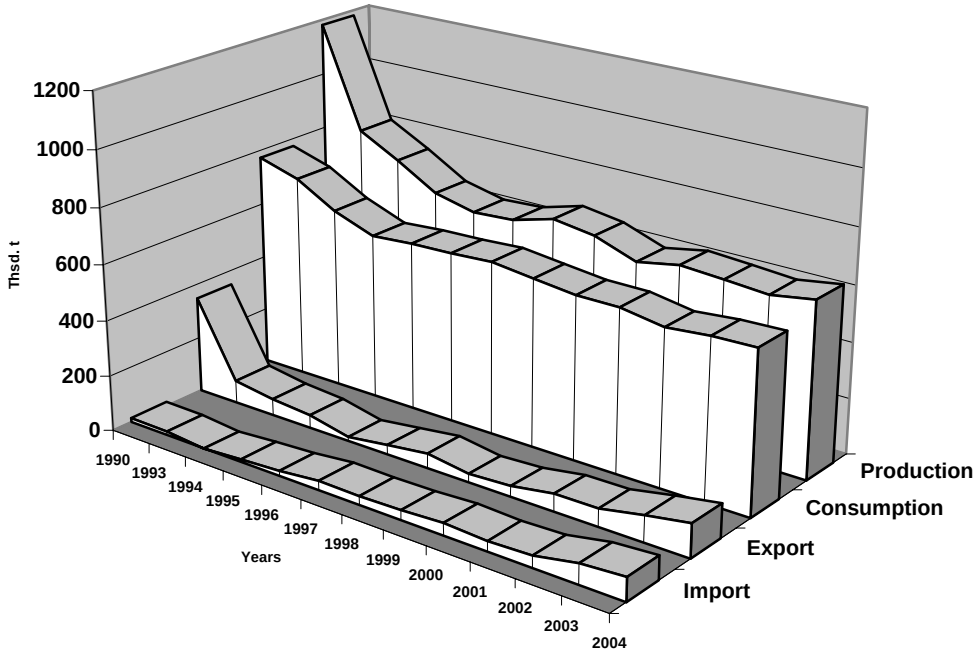

Fig. 1. Changes in the volume of the meat market in the Republic of Belarus, 1990-2004
Source: [Rudenko 2005]

The main reason for decline in meat production is the decrease in the livestock head number. From 1990 to 2002 the number of cattle head decreased from 6975 thousand to 4005 thousand or by 42%; number of pigs head from 5051 thousand to 3329 thousand or by 34%; poultry from 50.6 million to 25.1 million or by 50.4%; sheep from 404 thousand to 73 thousand or by 81.9%. It can be seen that the greatest stock decline was in sheep and cattle breeding. Only in 2003 and 2004 the stock decline in pig and poultry breeding was stopped. The same situation can be seen in the cattle stock density per 100 hectares of farmlands. During this period the cattle stock density decreased from 71 to 46 pig stock density from 63 to 48. The number of cattle head per 100 hectares decreased in all agricultural enterprises from 72 to 49, which is 68% of the 1990 level.

The main meat producers in the republic are state agricultural enterprises. But nowadays their share is decreasing. In 1990 they produced 1011 thousand tons in slaughter weight which amounted to 85.6% of the total, in 1995 only 73.9%. Subsequently their share remained on the same level. In 2004 they produced 455 thousand tons of meat which amounted to 73.7% of the total.

At the same time there was a decline in meat production per capita. In 1990 it amounted to 116 kg, in 2004 to 64 kg (table 1).

Table 1. Production of meat per capita (slaughter weight, kg/year)

Country	Year						
	1990	1995	2000	2001	2002	2003	2004
Former USSR countries							
Belarus	**116**	**64**	**60**	**63**	**62**	**61**	**64**
Estonia	116	47	39	42	50	50	52
Kazakhstan	93	62	42	44	45	47	49
Lithuania	143	57	53	43	50	57	64
Russia	68	39	30	31	33	34	35
Ukraine	84	45	34	31	34	36	34
Rest of the world							
Belgium	129	166	169	173	177	169	169
Czech Republic	103	90	76	78	77	75	73
Denmark	301	355	373	392	399	394	395
France	101	109	110	110	109	107	104
Germany	91	71	76	79	79	80	82
Hungary	155	102	117	111	123	122	114
Poland	77	71	75	75	81	89	85
Spain	88	100	120	124	126	133	135
Whole World	**34**	**36**	**39**	**39**	**40**	**40**	**41**

Source: [Belarus 2005, p. 192-193]

Different situation prevails in the countries of Europe. In Europe meat is a traditional foodstuff. The leader among the countries of EU is Denmark. It produces 395 kg of meat per capita (table 1). First of all it proves that the branch is export oriented. The high level of manufacture and consumption of meat in Denmark is achieved mainly due to the intensification of the branch which is connected with the proceeding concentration of production.

The first place in gross output of meat among the countries of EU is taken by Germany (6798 thousand tons annually), the second place by France (6313 thousand tons) and the third by Spain (5564 thousand tons). All these countries are characterized by an intensive production of meat of 91-135 kg per capita.

The East European countries are on the contrary characterized by a recession in meat production. So the meat production in Russia from 1990 to 2004 was half cut, in Ukraine by more than 64%. The level of meat production per capita is low. So there is a need to import meat.

Poland is the unique country that managed to keep the potential of the branch and to become the leader in the production of meat among the East European countries. From 1990 to 2004 it could increase production by 10.7%, from 2965 thousand up to 3283 thousand tons per annum, with constantly growing intensity of production.

In connection with the above mentioned tendencies the contribution of some branches of livestock breeding to the gross production of meat has changed (Fig. 2).

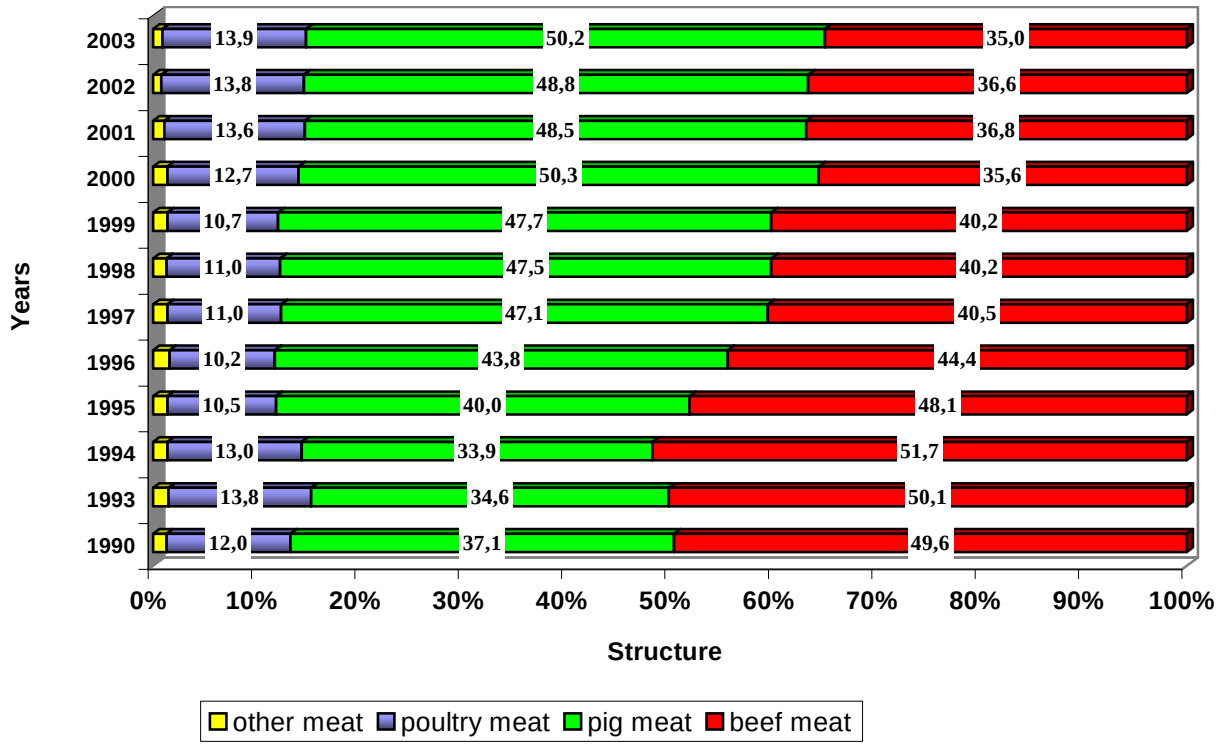

Fig 2. Changes in meat production structure in the Republic of Belarus 1990-2003
Source: [Selskoe... 2005].

Today in Belarus the basic share of meat and meat products comes from pig breeding. Its contribution has increased from 37.1% in 1990 up to 50.2% in 2003. The share of poultry meat has increased from 12% up to 13.9%. The share of beef meat has decreased from 49.6% down to 35.0%. It was a result of price increase for beef meat and an increase of cattle diseases.

As a whole pig breeding is developing very intensively in the countries of the EU and takes a significant place in the total meat production. Slaughter weight increase is predicted by

the leading producers (Germany, Spain, France, Denmark) and also Italy, Finland and Sweden. On the whole the prices for pork in 2003 went down under the influence of a high level of production and a decrease of demand [Rudenko & Rudenko 2005].

In this connection it is important to analyze modern conditions and prospects of pig breeding in Byelorussia.

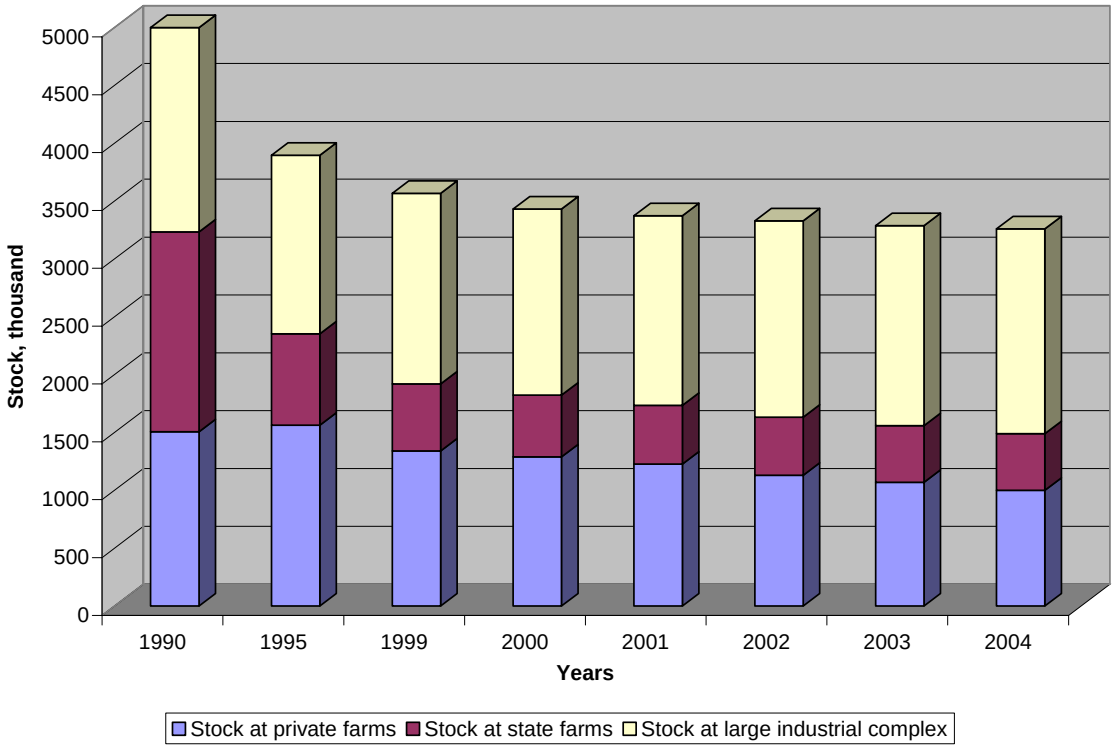

Fig. 3. Number of heads in the pig stock in the Republic of Belarus 1990-2004
Source: [Selskoe... 2005].

From 1990 to 2004, the stock of pigs was constantly decreasing from 5051 thousand heads to 3407 thousand heads or by 32.5% [Shpak & Pestis 2005]. Rates of reduction were higher during the period from 1991 to 1996 (7-9% per year) and slowed down from 1997 to 2003 (2-3% per year). In 2004 pig stock increased by 3.6% for the first time.

The greatest reduction of stock was observed at the agricultural enterprises. During the examined period the number of heads decreased from 3545 thousand to 2146 thousand or by 39.5%. Subsequently the recession had stopped, for the next two years it grew a little and by the beginning of 2005 it accounted for 2345 thousand heads that equals 66.1% of the level of 1990.

For the same period the reduction of stock numbers in private farms was less significant. By the beginning of 2005 this number hit 1042 thousand heads or 69.2% of the stock in 1990. The positive tendency is the increase of stock numbers in farms.

The basic stock of pigs in the agricultural organizations now is concentrated in the specialized state pig-breeding complexes. Industrial complex is a large farm (12-104 thousand heads) with full automatic processes. All of them belong to the state. They keep 1727 thousand heads (95% of the level of 1990) which is 77.9% of the stock in agricultural organizations or 52.5% of the republican quantity. Current capacity of large industrial complex is 94% in comparison with the planned capacity.

The total production of pork in 1990 in Byelorussia made up 438 thousand tons. Then, because of the reduction of livestock, production began to fall sharply and in 1995 it made up 263 thousand tons, i.e. reduction of 1.7 times. Further production gradually began to grow and, despite of the continuing reduction of stock during the past years, it stabilized at the level of a little more than 300 thousand tons.

As the basic stock of pigs is concentrated in the specialized complexes their share in total production of pork is significant. So in 1990 large industrial complexes produced 238.6 thousand tons of pork in live weight that made up 62.9 % of the output in all agricultural enterprises or 85% of the planned capacity. Lately this ratio, due to the above described reasons, began to increase and in 2003 it reached 86.9% or 82% of the planned capacity.

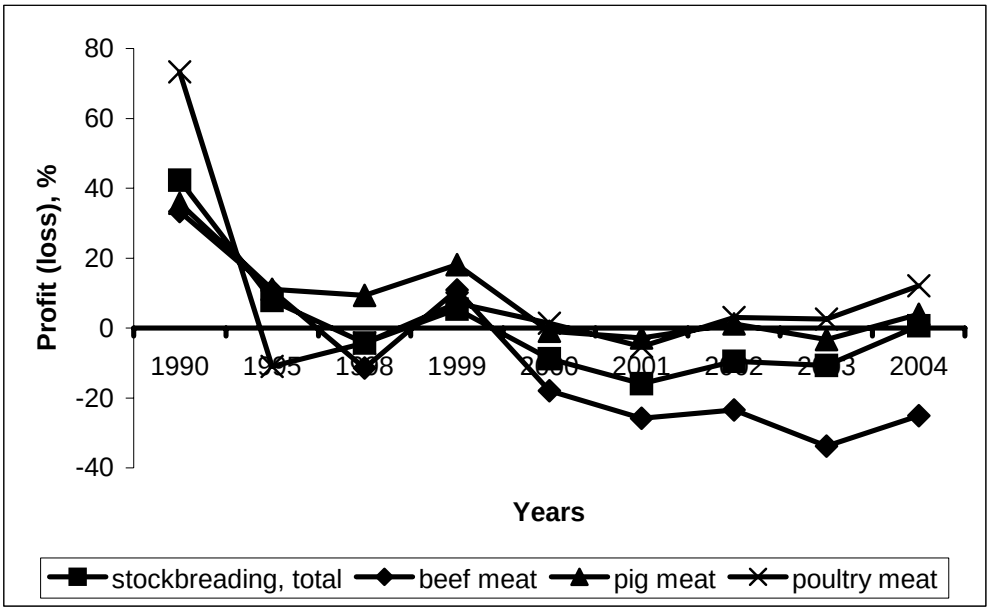

Fig. 4. Profitable and loss dynamic of different branch of stockbreeding in the Republic of Belarus.
Source: [Selskoe... 2005].

Production of pork is stable mainly due to the increase of the daily average weight gain and reductions of the food conversion rate per unit of production. It is one of few parameters which level now is higher than in 1990. At the same time mortality of animals has increased and litter production has decreased.

There are still many unsolved problems in meat production in Belarus. It influences the basic economic parameter which is the profitability of production. So there is a negative situation about profitability of stockbreeding.

In 1990 profitability of the branch made up 35.7%. It was due to the establishment of high purchase prices for meat and subsidies for mixed fodders (Fig. 4).

However, the subsequent negative tendencies in agriculture and animal breading have resulted in the decrease of profitability of stockbreeding. In 2000 its loss made up to 8.8%, and 15.9% in 2001. In 2003 the loss made up to 10.7%. In 2004 the profit is 0.6%. Next year the loss of beef meat producers made up to 25.1%, the profit of pig meat producers was 3,9%. The most profitable branch of stockbreeding today is poultry meat. The profit is 12.1%.

Such situation in stock breeding is first of all connected with inefficient feeding. Low gains in weight of animals make manufacturers either sell animals in low weight conditions or increase the period of animals fattening, thus increasing feed expenditure.

At the same the profitability of some other branches of republic's agriculture remains positive. So in 1990 plant cultivating as whole was profitable by 58.5% that is 16.2 points more than the stock breeding. Plant production remains more profitable even in modern conditions, by 47.3% in 2000, 9.9% in 2003; and 19.4% in 2004.

Almost each item of plant-growing production is rather profitable to rise. For example the profitability of cereal grains constituted 82.4% in 1990 and in 2004 it was still 25.4%. As a result the agricultural enterprises prefer plant growing to livestock breeding. It should be noticed here that the dynamics of prices is favorable for manufacturers of agricultural production. But the prices of realization of plant production grow faster. For example the price of realization of one ton of grain during the last 4 years have grown 3.7 times and that of livestock and poultry only 2.7 times.

Conclusion

On the basis of the above stated data it is possible to draw a conclusion that the basic meat manufacturers in Belarus are large specialized complexes of agricultural enterprises. Despite of

heavy economic conditions the stock of animals is growing a little and the total production of meat is increasing too.

But in such economic conditions the prospects of stockbreeding are rather pessimistic. The deterioration of the fixed assets is going on, and the majority of enterprises do not have enough means not only for modernization of the branch, but also even for the elementary repair and replacement of old equipment. Further intensification of the branch remains undecided. The majority of farms and complexes were constructed in 70s and 80s of the last century. Such conditions do not allow to have efficient competitive production and a stimulus to be engaged in pig breeding. To the majority of pig-breeding facilities of the area the technologies used on highly productive farms of Germany, USA, Great Britain, France, Spain and other countries are inaccessible.

In modern economic conditions to solve the problem of the branch without a financial help is practically impossible. The leading role in that case should belong to the state. It is necessary to study the experience of the advanced farms of the republic and neighboring states. It will allow to increase the efficiency of meat production.

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Olena Slavkova[1]
Sumy National Agrarian University, Ukraine

AGRARIAN POLICY INFLUENCE ON RURAL TERRITORIAL DEVELOPMENT

Abstract. One of the key factors of rural areas development promotion is the effective local governing institutions' activity and entrepreneurship development through collaboration with entrepreneurs from the EU. The increase of effectiveness and realization of regional development strategy in the context of European norms and traditions is one of the most important means of poor developed territory protection under the conditions of globalization and European integration.
Key words: agrarian policy, rural areas development, local governance

Introduction

Ukraine's entry into the market economy and EU can lead to radical changes in general resource uses; consequently, it results in deep transformation of market processes. This phenomenon is characterized by a diversity of performances. The most important are:

- decrease of financial flows in material resources and increase of intellectual resource costs,
- placing emphasis on innovation technologies,
- transition from human resources management to human relations harmonization,
- increasing the competitiveness of diversified production in the information technologies sphere.

In the process of globalization and forming of universal principles and rules in the context of the international economic system, rural territories face complicated tasks. These problems are especially notable for territories of the post-Soviet area, that border the enlarged EU. Thus, the diffusion of borders between these territories and integration tendencies are of importance. At the same time, it is fundamentally important to establish the basis for such collaboration, when one of the parts is an EU member, and another one is not.

The concept of rural development policy

One of the key factors of rural territory development promotion is the effective activity of local governance institutions. As Yurchishin V.V. [2006] considers, the change of agrarian policy direction is the principal instrument of effective rural development. At present, local government is the main initiator of effective agrarian policy reform. Concerning the law project 'Main directions of governmental agrarian policy' one of the main goals of

[1] PhD in economics

governmental agrarian policy is rural development and solving rural social problems [http... 2006].

Concerning main directions of agrarian policy, complex development of rural areas and increase of social protection level include: rural social infrastructure operation under new economic conditions, creation of democratic local governmental regulations, development of depressed territories, alignment of rural and urban life conditions, decrease of rural unemployment, increase of rural inhabitants' income level, providing rural territories with experts, development of small and declining rural settlements.

To achieve these objectives, local institutions have to undertake the following measures:

- legislative innovations,
- informative, consulting and educational work,
- staff training and community revitalization,
- transport infrastructure development.

The favourable regional decentralization model for Ukraine consists of two stages. In the first stage, the range of local government authorities is defined, and dependence on the central government is eliminated. In the second stage, this process is accompanied by improved local government institutions and a means of augmenting local financial resources.

As a result, the above described decentralization of the regional authority system in Ukraine will be coordinated with the European principles:

- regional bodies of the government will coordinate realization of state economic and financial policy in regions,
- regional bodies of the government will control the state social and humanitarian programs at a regional level,
- regional bodies of the government will be responsible for realization of separate external economic functions.

All functions connected to the current development of the regional economy, it’s social and humanitarian spheres, should be included in the authority of local government institutions. These functions include rationalization of complex economic areas, foreign investment attraction, coordination of municipal militia, education, culture and health protection establishment.

The above mentioned decentralization of authority is impossible without reforming the system of financing of regional and local government bodies. After all, the present practice

existing in Ukraine, when practically all regions are financed from transfers from the central budget, results, on the one hand, in formal financial losses for the majority of them, and on the other hand - in reduction of financial policy efficiency and expansion of corruption in the central ministries and departments.

Comment on practical approach to rural development strategy in Ukraine

Significant attention is merited for strengthening public organizations and scientific institute activities, re-directing their efforts to the solution of problems of social and economic development of territories, and creating the conditions for innovational improvement of industrial and administrative technologies.

Besides, the use of resources which are given within the framework of programs of international technical help, is also important. The rational use of such resources promotes formation of modern infrastructure, the solution of environmental problems, intensive development and economic growth.

All the above mentioned tools should be included in the development strategy of each territory. The given strategy should be coordinated with appropriate area strategy of growth and conceptual bases of economic development of the country. The necessary condition of territorial development is working out the strategy, which takes into account economic safety of the territory.

Economic efficiency depends on resources and investment attraction in rural territories. During 2004, the amount of capital investment was 89.3 billion grivnas (85 percent is fixed capital investment, 10 percent is investment in major overhaul). In 2003 the amount of capital investment was 51 billion grivnas, and in 2002 it was 37 billion grivnas [Miscevij... 2005].

The intensity of foreign investment in total investment during the last four years was 12 percent (on every 9 grivnas respondents put only 1 grivna). Thus, influence of foreign investment in the Ukrainian economy is much below the needed level.

The basic risks of foreign investment are:

- risk of political pressure,
- risk of low levels of profit,
- risk of pumping out of intelligence,
- risk of dishonest competition,
- risk of theft of intellectual property,

- risk of deterioration of the business environment.

Thus, institutions of local government should have at their disposition the appropriate tools for reduction of investment risk.

Conclusions

Formation of regional strategy in conditions of the European integration of Ukraine demands significant attention not only to economic and social components of development, but also to decentralization of authority and strengthening the role of local government.

Thus, for realization of a progressive rate of the European integration, it is necessary to reform local authorities in Ukraine. Such policy should be based on values and traditions of EU. It becomes one of the important elements of effective protection of the Ukrainian poorly advanced territories from the external expansion caused by inadequate administrative structure of local self-governance.

Abroad institutions of local government have a set of tools of economic, legal and financial upholding of regional interests. If the given tools are not used in the Ukraine, the level of social and economic safety will decrease significantly.

One of the directions of rural territory development programs is entrepreneurship development, including collaboration with entrepreneurs from the EU. At the same time, foreign investments can activate entrepreneurship as a form of economic development intensification.

The increase of effectiveness and realization of regional development strategy in the context of European norms and traditions is one of the most important means of poorly developed territory protection under the conditions of globalization and European integration.

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Anna Sychevnik[1]
Grodno State Agrarian University, Belarus

THE DEVELOPMENT OF MILK MARKET IN BELARUS

Abstract. Problems of functioning of the market of milk in Belarus are considered. The market of milk has a top of priority in the Republic of Belarus. These goods are socially significant. The state strongly influences the processes occurring in the market of milk, however this influence should decrease in the future. The author considers also problems of formation of prices for milk and dairy products.

Key words: milk market, state intervention

Introduction

Theoretical and practical discussions about ways of the further functioning of agriculture in Belarus, patterns of ownership and the organization of production are continued in the modern economic literature. Basically, directions of reforms are certain, priorities are allocated, the sequence and terms of transformations are coordinated. But there is a question: how much precisely and correctly these priorities are certain as well as all aspects of development of economy and development of society are considered. The analysis of economic system shows various problems, various planes, and some questions and problems have no unequivocal resolutions. The market of milk is analysed as a complex system: supply and demand, functional structure, organization of market structures. The market of milk and dairy products should be analysed at two levels: primary and secondary. The market of milk, as well as any other, possesses adaptive opportunities, but results of its work often miss the purposes of a state policy. The intervention of the state in markets should necessarily be considered separately. Now the market of milk in Belarus has own specificity which consists in the following:

- presence of many participants int the primary market (agricultural enterprises, farmers, peasants, etc.)
- milk has a short period of storage and a universal character of use
- milk production a has universal character, also processing and sale of dairy products have universal character. The local markets have priorities.

The market of milk has a top priority in Belarus. It is caused by its economic and social value among other grocery markets. The average share of milk production in the structure of commodity output of agricultural enterprises stays at 14.6 %. An average 26.9-

[1] MA, email: annvlad@ramblar.ru

30.4 % of consumption depends on milk. It is necessary to make 6-7 million tons milk for maintenance of food safety. The internal need makes 4.5 million tons. The milk production of 1.0-1.6 million tons is planned for making 78-90 thousand tons of animal oils and 34-44 thousand tons of fat cheeses. All this causes a need of studying and analysing conditions and prospects of development of milk market in Belarus.

Supply in the milk market

Steady enough demand for milk and dairy products is observed in the last years in the internal market. It is caused by low solvency of the population and opportunities of the market. The offer of milk is above demand of milk.

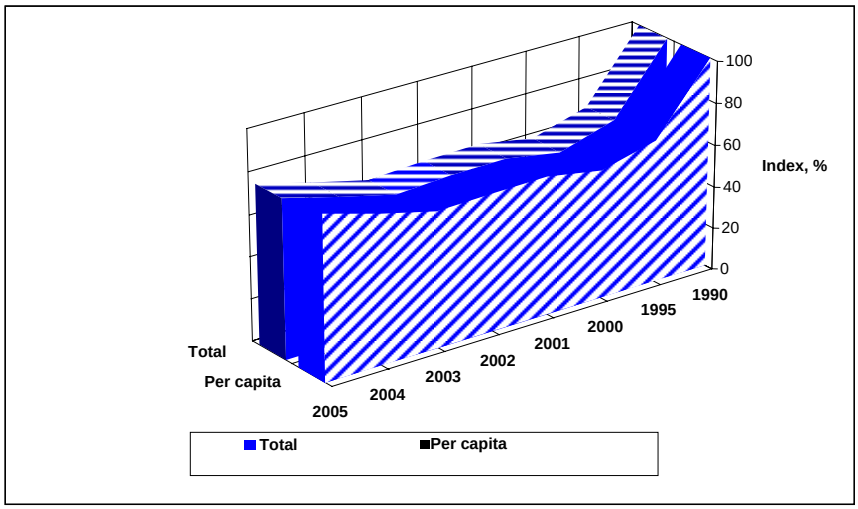
About 2300 agricultural enterprises, farms and personal part-time farms of the population produce milk in our country. Changes of volume and the level of production of milk in years beginning with 1990 can be seen in table 1.

Table 1. Milk production in all categories of producers

Production	Year							
	1990	1995	2000	2001	2002	2003	2004	2005
Total, thousand tons	7457	5070	4490	4834	4773	4683	5149	5678
Per capita, kg	732	497	449	485	481	474	524	581

Sours: http://mshp.minsk.by/

According to the data from the Ministry of Agriculture and Foodstuffs of the Republic of Belarus 732 kg of milk per capita was produced in 1990. This means that 15 years later in 2005 the milk production made 79.4 % of the 1990 level. Rates of recession and growth of milk production in the country are shown in figure 1.



Source: own elaboration on data http://mshp.minsk.by/
Figure 1. Changes in milk production in relation to the 1990 level

Sharp slump of milk production was observed in years 1990-1996. Then a period of relative stabilization has come. The increase in volume and level of production of milk is traced in the two last years.

Production efficiency of milk has decreased in Belarus since 1991. The greatest loss ratio was 20, 8 % in 1994. Unpredictability of production has been connected basically with high production expenses and a low level of procurement prices. Milk production has become profitable in the last two years owing to measures in this area, based on scientific development. Dairy production was most effective in territory of the western region of Belarus (Grodno, Brest). It is a zone of an arrangement of the largest milk processing factories, and also commodity markets. Milk produced in the agricultural enterprises, big farms and family farms should be advanced to and realized in the secondary market. In the primary market consumers of the raw milk are the processing enterprises like dairy combines, oil-cheese factories, dairy-canning combines etc. The dairy industry of Belarus is represented by 120 enterprises with a capacity of processing from 1.5 up to 781.3 tons per shift. The dairy branch has a share of about 20 % in the total commodity output of the food-processing industry. The slump in production of milk has resulted in a lack of raw material for the dairy industry; capacities of some dairy enterprises are filled in 40 % and less. Production of all kinds of dairy products has been reduced. So production of whole-milk has decreased by 47.7 % in relation to 1990, animal oils by 59.6 %, fat cheeses by 19.3 %. The quality of milk has a big influence on the condition of processing branch. Premium milk (from which it is possible to make competitive products) has made till recent times less than 50 % of volume of purchases of milk. In the last two years the quality of purchased milk has appeared as in table 2.

Table 2. Quality of milk bought from the agricultural organizations

Area	Quality characteristics					In quality grades, %:							
	basic fat content, tons	fat content, %		cooled milk, %		extra		I		II		low-grade	
		2005	2004	2005	2004	2005	2004	2005	2004	2005	2004	2005	2004
Brest	694742	3.65	3.63	92.7	91.1	49.6	43.4	44.4	49.2	5.5	6.8	0.5	0,6
Vitebsk	423418	3.62	3.63	52.8	50.4	35.0	30.4	53.7	54.6	10.3	14.0	0.9	1.0
Gomel	405563	3.57	3.56	63.6	56.1	28.5	25.3	60.9	61.6	9.3	11.3	1.3	1.8
Grodno	547997	3.53	3.54	75.6	75.8	44.6	45.7	50.7	49.5	4.5	4.5	0.2	0.3
Minsk	902809	3.56	3.60	66.2	66.6	65.2	55.6	26.2	32.0	7.7	11.0	0.9	1.4
Mogilyov	392077	3.59	3.60	51.1	42.9	31.4	32.1	56.9	57.7	1.1	9.3	0.5	0.8
Alltogether	3366606	3.59	3.60	69.4	67.0	46.5	41.7	45.2	48.0	7.6	9.3	0.7	1.0

Sours: http://mshp.minsk.by/

At shows the data in table 2, the Minsk and Brest areas produces the best quality milk. Relative share of low-grade milk is the least in the Grodno region. The quantity of milk of low-grade was reduced in Belarus.

In 2005 the Ministry of Agriculture and Foodstuffs, committees, associations and organizations worked on fulfilling a state and branch programme "Quality" for years 2004-2006. Systems of quality were introduced and certificated on the basis of international standards ISO 9000 in 31 milk processing enterprises. According to the state programmes in 2005 financial assets of 46310.5 million dollars were used in modernization of dairy industries, in reconstruction and technical re-equipment of dairy-commodity farms 83063.3 million dollars, in the cattle-breeding complexes 31767.9 million dollars The processing enterprises are giving big attention to introduction of the newest modern technologies and compounding of food stuffs, updating and expansion of assortment of production, increase in release of new kinds of food products with the improved consumer properties and longer periods of storage. Food stuffs are production with a raised biological value (dairy products, products with additives of iodine, aluminous additives, a complex, fruit, vegetables, spices, lactose). That allows to supersede imported products (yoghurts, vegetative oil etc.) in the domestic market.

The organizations of processing branches of Ministry of Agriculture and Foodstuffs mastered a release of 1573 new kinds of foodstuff. Relative share of new production has made 8.4 % of the total production volume.

Work is constantly spent on perfection of the laboratory control over quality of products. Laboratories of the enterprises are provided with the necessary equipment, devices and reagents for performance of control over the quality of production. Inspectors of production are proceeding according to schemes of the laboratory control, coordinated by the territorial centres of hygiene with respect to the physical and chemical, microbiological, radiological parameters which are stipulated by the technical normative legal certificates. Industrial laboratories of some meat and milk processing enterprises are accredited on technical competence and independence.

The programme of perfection of agriculture of Belarus supposed a creation of the grocery agro industrial formations. They include the agricultural enterprises, factories of milk processing, the trade firms. The income of joint activity is distributed among participants (proportionally to expenses of each of them on production of finished goods). Some attempts of creation of such groups were made in the last years in Belarus. However these attempts not always were successful. For today the experience of Open Society "Grodnomolkombinat"

with reorganization of APC «Berestovichanka» to enterprise "Agromir" is noteworthy. Capital investments are significant in this enterprise (only in 2004 investments of 233.1 million dollars were required). It has yielded positive results. It has allowed to raise production efficiency of milk.

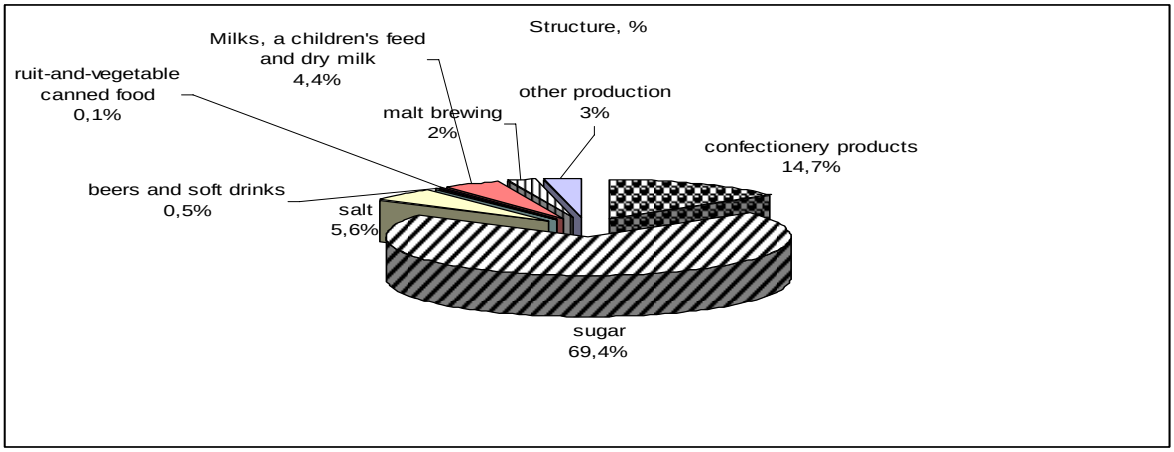
Therefore it is necessary to form procurement zones around milk factories. It will help to receive a growth of milk production volumes and milk production efficiency. This zone should include the specialized agricultural organizations of milk production (with a herd of 1000 and more cows per farm of and yield of not less than 4000 kg of milk per cow per year). Also an organizational reorganization of dairy branch is required.

Demand in the milk market

As it was marked earlier, rather a stable demand for milk and dairy products is observed in Belarus. The internal need makes 4.5 million tons milk. Demand of milk is below its consumption. Rates of falling of the supply are above rates of decrease in internal consumption. Demand of milk has fallen 1.5 times. Supply of milk has been reduced more than 1.6 times in the domestic market. Export deliveries have decreased to 30 % in comparison with the level of 1990. Consumption of dairy products has been reduced from 428 kg down to 257 kg per capita (in comparison with 1990 to almost 40 %). Consumption of milk in Belarus is traditional. It is based on the division of labour which has developed in due time.

The most important market of dairy production in Belarus is the internal market. The most significant from external markets is the Russian market. Export of dairy products is characterized by positive dynamics. The butter prevails in the commodity structure of export (33-45.7 %).

The analysis of export of production of the enterprises which are a part of the concern "Belgospischeprom" has shown that the foreign trade turnover of the enterprises in the concern for 2004 amounted to 473.3 million US dollars and the rate of growth 115.5 %. Commodity structure of export is as following: confectionery products 14.7 %, malt 2.3 %, a children's dry dairy feed and dry milk 4.4 %, salted food 5.6 %, beer 0.5 %.



Source: own elaboration on data http://mshp.minsk.by/
Figure 2. Structure of export by concern " Belgospischeprom"

One of basic problems of the milk market is the mechanism of formation of the milk and dairy products prices. The state exerts a big influence on the price level. Regulation occurs at two levels. First level is the purchase of milk from the agricultural enterprises. Second level is the sale prices of milk and dairy products from the processing enterprises. There are restrictions on establishment of the trading extra charge on these products in retail. Such mechanism of price control is connected with the social importance of milk and dairy production. The state pursues some purposes. Firs purpose is covering by prices of the costs of milk production in the agricultural enterprises. Second purpose is availability of the milk products to the population of Belarus. The milk prices have been raised by 19.6% since spring 2006. One ton of premium milk will be bought for 133 dollars now, the first grade for 107 dollars, the second grade for 84 dollars, not high-quality milk for 56 dollars. Limits on purchase prices of meat, milk and other socially significant food stuffs are increased by 0.6 % in Belarus. The Ministry of Economics has approved new upper limits on purchase prices for these goods. Ministry of Agriculture and Foodstuffs considers the established increase of the prices insignificant. Procurement prices of milk have been increased by 5 % since March 2006. Purchase prices on dairy products rose only once during the past three months. The existing order of price control always prizes someone involved in the milk and dairy production. It is the agricultural enterprises i.e. direct producers of milk, or the processing enterprises, or the buyers.

Conclusions

1. The Belarus market of milk and dairy products represents a complex multilevel system. The mechanism of system functioning is insufficiently adjusted and demands improvement its now. In particular it needs regulation of the relations between the milk

manufacturers, the processing enterprises and trade. The basis of it is a creation of grocery agro industrial formations.

2. The state intervention is applied to the milk market in Belarus. However, any market possesses adaptable opportunities. The state intervention should be limited to this market. The agraricultural policy should be directed to a reduction of the state influence on the milk market.

3. It is necessary to consider interests of all participants in the market (producers of crude milk, processing enterprises and buyers) when the milk price level is established. The basic criterion of efficiency of the state actions should become the availability of products to the consumer.

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Tachytskaya Katsiaryna[1]
Grodno State Agrarian University, Belarus

ESTIMATION OF FORMATION AND USE OF A MANPOWER

Abstract. In the last years a disturbing tendency of reduction in the birth rate and increase in the death rate is observed, and the situation in the countryside is especially dangerous. The most qualified experts and youth leave countryside. Youth in its turn is a potential labour force. The state uses measures to improve the situation. However the further development of manufacture and the effective utilization of labour potential are impossible without labour efficiency growth.

Key words: labour force, population growth

The overall objective and sense of economic development consists not in the accelerated development of market economy, but in giving each person a chance to realize his potential and live a healthy, creative life. Formation of manpower depends on a set of factors and, first of all, we shall consider the demographic situation, as manpower resources depend on its improvement. The demographic situation both in Belarus and abroad remains difficult enough (table 1).

Table 1. Natural movement of the population (per 1000 person) *

Year	Birth rate		Death rate		Natural growth rate	
	Belarus	Poland	Belarus	Poland	Belarus	Poland
1990	14,0	14,3	10,8	10,2	3,2	4,1
1995	9,9	11,2	13,1	10,0	-3,2	1,2
2000	9,4	9,9	13,5	9,6	-4,1	0,3
2002	8,9	9,3	14,8	9,4	-5,9	-0,1
2004	9,1	–	14,3	–	-5,2	–

Source: [Statistical… 2006, p. 14-22].

As the research shows the birth rate is reducing, and the death rate is increasing. It led in Belarus in 1995 to a natural decline in population (-3,2 per mille), and in Poland much later, in 2001 (-0,1 per mille). It is interesting that the birth rate in these countries since 1990 has been nearly the same. The death rate during the analyzed period in Belarus increased by 36 %, in Poland decreased by 7,8 %. The probable reasons for this the author sees in the decline of infant death rate (since 1990 it has decreased by 35,3 % in Belarus; in Poland it has decreased by 63,7 %) and in the increase of life expectancy. In 2003 in Belarus male life expectancy was 63,2 years, female 75 years, in the neighbouring country 70,5 and 78,9 respectively. One of the factors of the increase in death rate in Belarus and its reduction in Poland is a disbalance in eating habits. As compared to the average norm of meat consumption (80 kg), in 2003 it accounted for 58 kg in Belarus and 72 kg in Poland. In 2003 alcohol consumption in Belarus was 9,2 l, in Poland 6,5 l. The statistics testifies that

[1] Doctoral student, email:katyarina2000@tut.by

depopulation takes place both in the Republic of Belarus as a whole and in separate regions, in particular in the Grodno region, and especially in the rural areas (see table 2).

Table 2. Natural population increase per 1000 people, persons

Population	Republic					Grodno region				
	1960	1980	1990	2002	2005	1960	1980	1990	2002	2005
general	17,8	6,1	3,2	-5,9	-5,4	18,0	8,1	3,2	-6,8	-6,6
urban	19,4	12,3	7,5	-1,6	-1,5	20,2	15,3	10,5	-0,1	-0,3
rural	17,1	-2,0	-5,6	-15,9	-15,2	19,7	-1,2	-7,2	-18,8	-20,2

Source: According to the Ministry Statistics and Analysis; Grodno Regional Management of Statistics

Natural increase of the population per 1000 people, both in the Republic and in the region, essentially differs between the city and the rural areas. The first symptoms of depopulation in the countryside were 20-22 years earlier than for the urban population. The negative natural increase began in 1979 and 1980. In the region it has been progressing since 1979. In 1979 it accounted for -1,2 person per 1000 people, in 2005 for -20,2 person. The excess in death rate over birth rate in the cities began in 2002 and was equal to -0,1 person, and in 2005 t -0,3 person per mille. The comparison of the natural increase of the urban and rural population shows that the death rate in the village has increased 96 times. Thus even the migratory process did not compensate the general decrease in rural population. Since 1990 the quantity of people arrived to the area has been reduced by 89,3 %, and the departed by - 95,4 %. It shows that the rates of departures are higher than the rates of arrival. As the result of the intraregional migration the urban population annually increases by 2-3 thousand, and the rural is reduced accordingly. The greatest part of the departed are youth from the countryside. So, in 2005 in comparison with 1995, of the youth having average special and secondary education, 6010 more left and 4884 people more arrived to the rural settlements.

Departure of youth for the city and abroad is a negative tendency which will affect the future demographic situation and the increase of the population. Leaving rural youth are future potential family founders and "suppliers" of labour. To improve the situation with the outflow of labour a state program « Revival and development of village for 2005-2010 » provides a number of actions. In our opinion one of the major ways of solving this problem is the essential increase of nominal wages up to 320-360 $. The growth of wages is shown in figure 1. This parameter renders significant influence on the reproduction of labour in agriculture, however it is the lowest in comparison with all the branches of the national economy. In 1990 it was similar to the industry, in 2005 the wages in agriculture reduced twice in relation to this branch. In 1990 the wages in agriculture were 99,2 % of the average monthly wages in the national economy, and this relation was equal to 65,3 % in 2005.

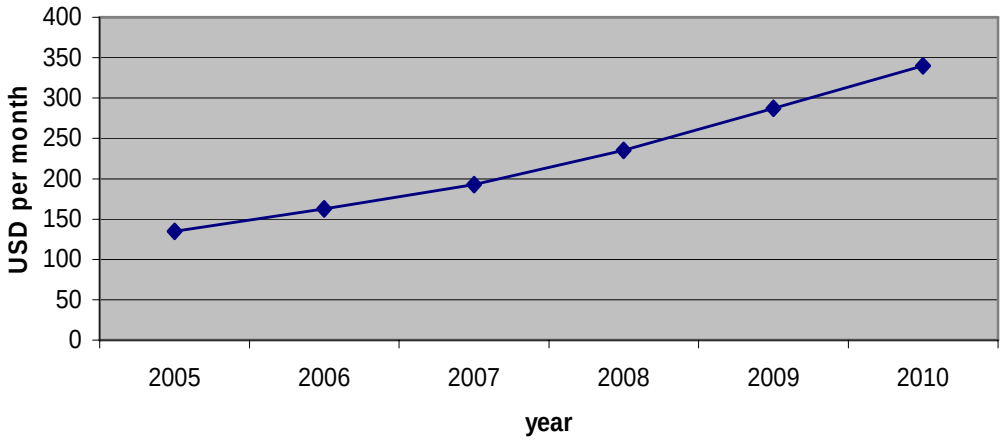

Figure 1. The predicted level of wages submitted by the program « Revival and development of village for 2005-2010 »

The decrease of the rural population and that employed in the agricultural production is an objective natural process connected with the use of new more progressive methods of crop cultivation as well as livestock and poultry breeding. However in Belarus and its regions the reason of the reduction of rural population are not only the above named factors, but also social and economic conditions of life of the rural population. For many decades the importance of the agrarian sector has been underestimated. There still exists a disproportion of prices for industrial and agricultural products, the standard of living of rural population is much lower than that of urban population. There are essential social distinctions between the conditions of life of city dwellers and villagers and a backwardness of rural social infrastructure. With a view of successful and progressive development of rural territories, motivation of residing in the countryside and the effective utilization of public funds for rural development and formation of qualitatively new types of rural settlements - agrarian town - is provided. Agrarian town is a comfortable settlement in which creation of an industrial and social infrastructure for maintenance of social standards for the population living in it and the inhabitants of adjoining territories is provided.

In Grodno region the Committee for Construction, Power, Transport and Communications carried out a complex inspection of rural settlements on the basis of which a list of agrarian towns of Grodno region for 2005-2010 is authorized. Totally for the period it is planned to equip 239 settlements of the city type (yearly distribution: 19 in 2005, 40 in 2006, 43 in 2007, 43 in 2008, 44 in 2009, 50 in 2010). Agrarian towns will be provided with 108 apartments with a total surface of 7,6 thousand m^2, the average size of an apartment is 70,37 m^2.

The developed and introduced actions will improve manpower situation, but will not change it radically. Constantly increasing natural decline in population and migration of rural youth into cities do not allow to speak about a fast growth of labour potential in the

countryside. Therefore the further development of production and economy as a whole is connected with an increase of labour productivity and a decrease in labour input (table 3).

Table 3. Labour input for producing 1 quintal of the basic agricultural products, man hours

Agricultural product	Year				
	1990	1995	2000	2002	2005
Grain	1,05	1,22	1,19	0,90	0,70
Potato	1,95	3,54	3,60	3,54	2,72
Milk	5,44	8,17	7,85	6,45	4,46
Gain in weight:					
- cattle,	27,11	45,40	56,97	33,57	23,48
- pork.	14,23	26,03	20,00	18,30	13,78

Source: on the basis of summary annual reports of Grodno region

As the data show, labour input for manufacturing a unit of the basic kinds of agricultural products has been reduced which is connected with a growth of the level of production intensity (table 4).

Table 4. Influence of the level of security of the basic production assets on the efficiency of agricultural production in Grodno region *

Groups of enterprises by cost of the basic production assets per 100 ha of agricultural land, million roubles	Numberof enterprises in group	Basic agricultural production assets, million roubles		Gross output, million roubles		Profit per 100 ha of agricultural land, million roubles	Level of profitability, %
		per 1 mid-annual worker	per 100 ha of agricultural land	per 1 mid-annual worker	per 100 ha of agricultural land		
up to 300,0	86	48,8	182,9	3,2	52,3	-1,5	-6,4
300,1 – 550,0	79	62,3	396,9	5,8	66,4	-0,8	-3,2
550,1 – 800,0	25	72,0	638,9	8,1	70,2	4,6	0,9
800,1 – 1050,0	12	80,8	958,5	11,0	71,2	8,3	6,3
more than 1050,0	7	84,3	1423,9	21,2	71,2	32,0	11,8

Source: own calculations

The research shows that the growth of the basic production assets increases labour efficiency, gross output and profit per 100 ha of agricultural land. As a result the unprofitable enterprises become profitable. So in the third group of enterprises of Grodno region where the basic production assets are worth more than 1050,0 million roubles per 100 hectares of agricultural land, the fixed capital amounted to 84,3 million roubles and gross output accounted for 21,2 million roubles per worker, and 71,2 million roubles per 100 hectares of agricultural land. The level of profitability on the whole has increased up to 11,8 %.

In the last years a disturbing tendency of reduction in the birth rate and increase in the death rate is observed, and the situation in the countryside is especially dangerous. The most qualified experts and youth leave countryside. Youth in turn is a potential labour force. The state uses measures to improve the situation. However the further development of production and the effective utilization of labour potential are impossible without labour efficiency growth.

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Wallace E. Tyner[1]
Purdue University
West Lafayette, Indiana, USA

FUTURE PROSPECTS FOR MULTILATERAL AND BILATERAL TRADE NEGOTIATIONS

Abstract. The GATT agreement was the first to include agriculture and to cover both border protection and domestic and export subsidies for agricultural products. The round completed successfully in 1994. The subsequent Doha or Development round aimed at furthering progress launched in GATT has not been so successful. This paper explores why the Doha round has been difficult and why it now appears there will not be a meaningful agreement. Developing countries are much more numerous today in WTO, and they insist on an agreement to better their situation. Agricultural subsidies are still a major impasse between rich and poor countries. The absence of the industrial sector to balance agriculture also is an impediment. Furthermore, bilateral and regional agreements have made much more progress and provide many of the gains that might eventually come from a multilateral agreement. Recent work has concluded that domestic reforms are key to achieving the gains of any trade agreement, and they will be essential for Poland to capture the gains from EU membership.
Key words: multilateral trade negotiations, bilateral trade agreements, Doha round, Development round

Introduction

The GATT round of trade negotiations concluded with the signing of the agreement in Morocco in 1994. The GATT round was the first to include agriculture in the negotiations. One of the outcomes of the agreement was the creation of the WTO beginning January 1, 1995. Since that time, the WTO has been the convener of trade negotiations and dispute settlement. The GATT agreement mandated that the WTO member countries get together to launch a new round of trade negotiations within five years. In 1999, even though the countries were not really well prepared, there was an attempt to launch a new round of trade talks in Seattle. But that attempt failed because of an interesting grouping of labor interests in rich countries and developing country groups.

Many developing countries felt that they did not get from the GATT round what they needed or expected in terms of market access and tools to accelerate economic growth and development. Also, the membership in WTO grew considerably to about 149 members (almost double) with most of the new members being developing countries. So the developing countries have greater weight in WTO than they did in GATT. They were not willing to launch a new round without some assurance that their needs would receive more attention. Then in 2001 a second attempt was made to launch the new round of trade negotiations in Doha, Qatar. There were no protests in Doha, and the meetings were better prepared. So the new round of trade talks was officially launched in Doha in 2001. This

[1] Professor, email: wtyner@purdue.edu

round is also called the “development round” to accentuate the importance that delegates agreed to regarding the special needs of developing countries.

But progress was slow in getting agreement even on a framework to continue the negotiations. A ministerial conference was scheduled in Cancun, Mexico, in 2003 with hopes of obtaining agreement on the framework and for establishing a road map for future negotiations. But developing countries were gaining strength, especially the G20 led by Brazil and India. At the same time, the world price of cotton had fallen precipitously, and the West African cotton producers were claiming harm from the cotton subsidies paid to rich country producers, especially in the United States. The argument was that because of the huge subsidies, US cotton producers increased their production, and that led to lower world prices, thereby harming poor cotton farmers in countries like Chad and Mali. The cotton issue was used to galvanize developing country insistence on rich country subsidy reduction and increased market access. Because of the hard stance on both sides, the Cancun ministerial meeting also failed, and no framework agreement was reached.

Finally, at the very last minute, a framework agreement was reached in July 2004 in Geneva. But the framework agreement left much work to be done. Another ministerial conference was held in Hong Kong in December 2005, and progress was made, but, still, many important issues remained unresolved. In June/July of 2006, there was a modality meeting in Geneva to attempt to break the deadlock and make progress in the talks. After weeks of intense negotiations without success, on July 24 WTO Director General Pascal Lamy announced that the WTO trade talks were being suspended [WTO... 2006].

The US administration authority to engage in the WTO negotiations (called trade promotion authority or TPA) expires in mid-2007. Without that authority, the US cannot meaningfully negotiate. The current sense is that there is too little time left to get a meaningful agreement before the US TPA expires, so, at least for the near term, most believe this round of WTO negotiations have failed. Most of the issues leading to the failure relate to agriculture.

Why did we reach this impasse?

To understand why we are now in this situation, we need to examine several important factors:

- What do the rich countries want from this round?
- What do the developing countries want from this round of trade talks?

- What is happening in other negotiations, especially bilateral and regional negotiations?

Let us examine each of these factors in turn.

Rich countries say they want a more liberal trade environment. They indicate they are willing to reduce to some extent their domestic and export subsidies to gain a more open trade environment. In December 2005, the EU did agree to eliminate its export subsidies by 2013 if other countries eliminated export incentives (such as US export credit provisions). Both the US and the EU have domestic subsidy reduction proposals on the negotiating table, with the US proposal calling for greater reductions. However, developing countries and some non-governmental organizations (e.g. Oxfam) claim the proposals do not go far enough.

Developing countries have consistently said that the major issues are rich country subsidies and access to developed country markets. Most of the analysis done by the World Bank [Agricultural... 2005] has indicated that developing country focus on rich country subsidies is misplaced. That is, the World Bank analysis argues that elimination of rich country subsidies would help developing countries much less than increased market access. Nonetheless, rich country subsidies have remained an important focal point for developing countries. "Our farmers can compete with rich country farmers, but not with the treasuries of rich country governments."

Another factor that has emerged is that the links between trade liberalization and poverty reduction have been demonstrated to be somewhat weaker than previously thought. Another 2005 World Bank book [Putting... 2005] argues that while trade liberalization is very important, it is the accompanying domestic reforms that must go along with the trade reforms that are critical. In other words, these domestic reforms permit the potential gains from trade liberalization to be realized. These reforms may also be important in targeting the gains towards the poorer segments of the population.

In addition to these factors, another important development has been the advance of bilateral and regional agreements. The EU has "Everything but Arms," and the US has the African Growth and Opportunities Act (AGOA), both of which provide essentially duty free access for many of the poorest countries to EU and US markets. In other words, these regional programs have provided to the poorest countries most of the benefits that they would get from a WTO agreement, at least in terms of north-south trade.

There are important differences for the rich countries as well between the GATT round and the WTO round. The GATT round succeeded in reducing or eliminating many

industrial tariffs. At present, industrial tariffs are quite low, so there is not great interest in rich country manufacturing sectors in pushing WTO negotiations. In contrast, for the GATT round the industrial sectors were pushing hard for the agreement and provided some pressure to make progress in the agricultural negotiations (always the most difficult). In the WTO round, that pressure from the rich country manufacturing sectors has been mainly absent.

Furthermore, there have been many bilateral agreements negotiated since the GATT agreement of 1994. The private sector tends to prefer the bilateral agreements because much more progress can be made much more quickly. For example, the Morocco-US free trade agreement (FTA) took effect in 2006. It took about 14 months to negotiate and is quite comprehensive. The US now has 15 bilateral FTAs and 5 regional FTAs [US Trade... 2006]. Recently, the EU also has accelerated the pace of negotiating regional and bilateral agreements. All told, there are now over 200 regional or bilateral agreements globally. Taken together, these agreements have reduced the perceived need for a broad global agreement through the WTO. This is the case despite the fact that economists almost universally would favor the multilateral approach to the regional or bilateral approach. Figure 1 illustrates how the estimated gains from a broad WTO agreement have declined through time as more bilateral and regional agreements have come into force. The most recent estimations reported in figure 1 were done in 2004.

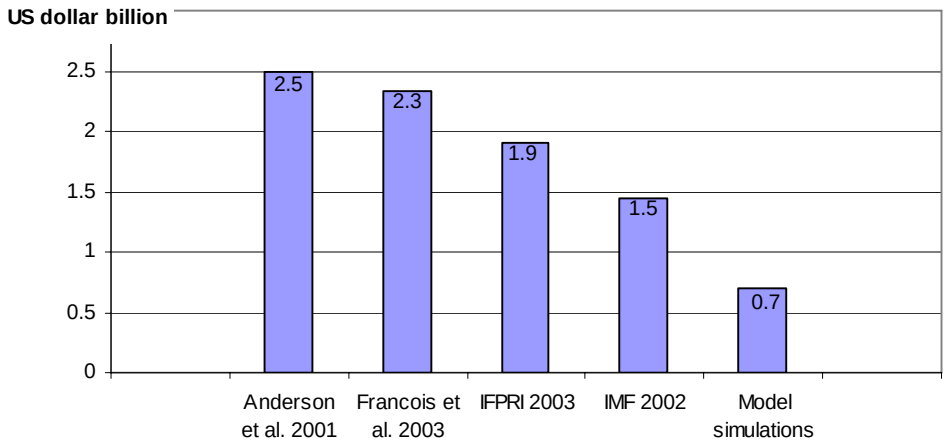

Figure 1. Welfare gain estimations through time for Sub-Saharan Africa
Source: [Osakwe 2004].

So the bottom line is that this round of trade negotiations is likely to fail because no group has a strong interest in seeing it succeed. Most of the players would like to see a WTO agreement. However, the perceived gains likely are not so large as in past rounds, and perceived costs may be higher. While rich and poor countries alike would like to see an

agreement, and it would be in the long-term interests of both sides to reach an agreement, it is simply not possible at present given all the factors discussed above. A paper agreement is still possible before the deadline, but a real substantive agreement seems highly unlikely.

What does this mean for Poland?

Being an EU member, Poland will have the advantages of the EU market for its agricultural products as the EU admission agreement comes into full force for agricultural products. So for Poland, entering the EU is like entering a regional FTA. And as indicated earlier, the key to success in entering new trade arrangements is to make the domestic policy reforms and public investments that will enable the country to reap maximum advantage of the trade opening. Thus, for Poland, investments in infrastructure, information and communication systems, and sound rural development policies will be key to enabling Poland to reap the gains for its agricultural sector of EU membership.

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Liudmila Zmitrevich[1]
Grodno State Agrarian University, Belarus

The main directions of improving the economic effectiveness in meat industry in Grodno region

Abstract. A comparative study of the meat processing firms in the Republic of Belarus is performed.. Those situated in Volkovysk region are most profitable and most labour efficient. The difference between the most efficient and the least efficient (they work at a loss) groups of firms is 7.1 percent points in profit margin.

Key words: meat processing industry, production profitability, Byelorussia

There is no agricultural organization in the agricultural sector of economy that has not experienced, to some extent, some crisis phenomena and economic or financial difficulties. For the last 10 years meat industry of the republic has been experiencing serious difficulties connected with the fall of volume of produce processed in the enterprises, moral and physical ageing of equipment, decreasing production profitability level due to many specific features of the market, absence of investments, bad sale market caused by a solvency decrease and other factors.

Animal fattening is the most effectively developed branch where one can mechanise almost all production processes and unite all production stages in one large enterprise. But under the modern conditions it is not rational and profitable for every agricultural enterprise to build a processing workshop. It is easier to create permanent ties with already existing meat processing enterprises securing profitable conditions. Nowadays many suppliers sell their products in small volumes and very often they are situated in a distance from the location of the processing enterprise, so the deliveries have an unstable character that has a negative influence on the work of both agricultural and processing enterprises.

One of the main problems of meat industry is a bad provision of enterprises with raw materials. For the period from 1997 to 2004 the total number of pigs has been reduced by 9%. Partially it is connected with the fact that many farms sometimes have to pay back the credits of goods in the period of sowing and harvesting campaigns in kind, selling the living animals, or they have to slaughter the animals before they reach the necessary weight and because of many other reasons.

The efficiency of agricultural produce processing depends on the extent of using the industrial capacities, which in 2004 made only 38% in the meat processing industry.

[1] MA, milon81@bk.ru

In 2004 meat processing enterprises of our republic got 323,900 tonnes of animal live weight or 96% of what had been delivered in the same period of the last year. The reduction of meat processing volume was admitted by 20 out of 27 meat processing enterprises, or 74.1%, and also in all regions except for the Gomel region (where the index was 100.3%). The growth is observed only in 6 meat processing enterprises. In the first place there is Gomel, where the value of the above mentioned index is 141.4%.

On the whole the dynamics of meat processing volume in 2002-2004 in all regions is shown in figure 1.

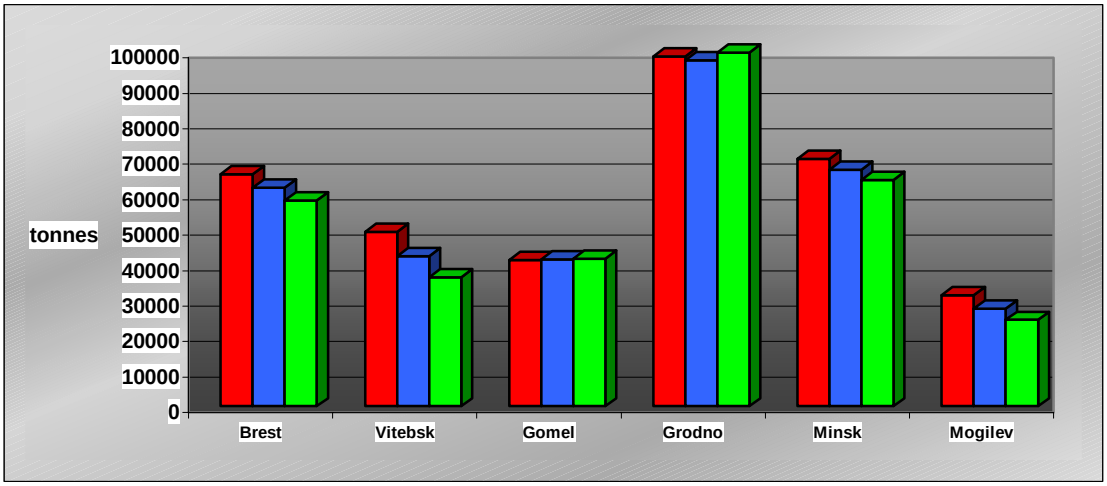

Figure 1. Dynamics of the meat processing volume in all regions in years 2002 – 2004

From the given data one can see that the meat processing volume in the Grodno region is 99,700 tonnes or 42.8% of the whole processing in the republic.

It is necessary to point out the fact that only 60.8% of the total amount of the animal live weight (595,500 tonnes) that was sold by the agricultural enterprises of the republic was taken to meat processing enterprises. The lowest share of industrial processing takes place in the Mogilev region (44.8%) and the highest one in the Grodno region (77.5%).

The production value of 1 tonne of processed animal live weight made up 2366000 roubles in 2004 against 2173000 roubles in 2003, which means a growth index of 108.9%.

In 2004 raw material was processed most effectively by the enterprises of Vitebsk, Minsk and Grodno regions, where the value of production output from 1 tonne of the live weight of animals processed made up 12,090,000; 11,400,000 and 10,973,000 roubles accordingly.

The structure of the sausage articles made in 2004 did not change substantially as compared to the previous year. The highest share in the total volume of sausage production is

taken by the boiled sausages, i.e. 41.8%, the share of smoked articles increased a little (9.7% against 8% in 2003).

The structure of the produced assortment of sausage articles in 2004 is given in figure 2.

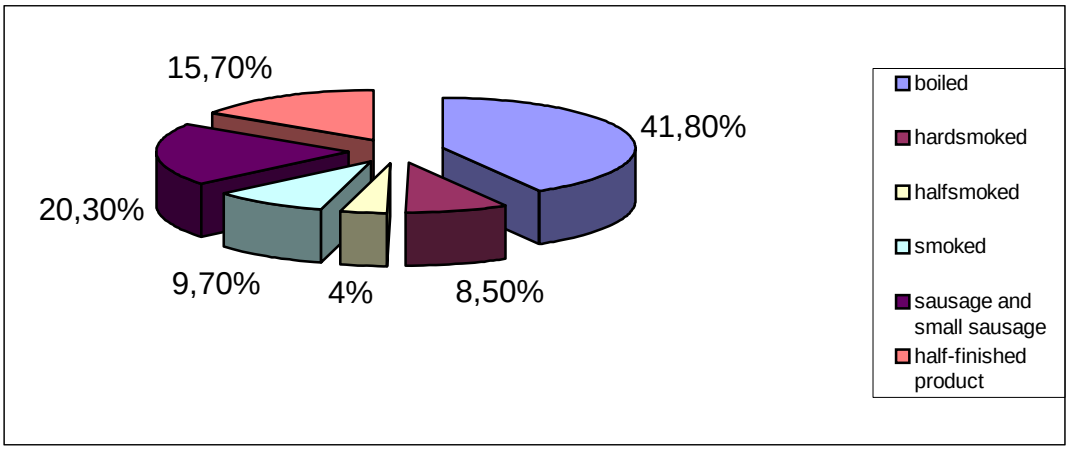

Figure 2. The structure of the produced assortment of sausage articles by meat processing enterprises of the Republic of Belarus in 2004.

Summing up the work of meat industry in 2004 it should be pointed out that the financial situation of meat processing enterprises continues to be tense. In 2004 the enterprises got a profit from the production market in size of 28,075 mln roubles. Nevertheless 5 meat processing enterprises incurred losses of a total sum of 3,708 million roubles. In the conditions of a chronic deficit of raw material, strict pricing policy of the state, inflation and the absence of means for improvement and modernization of production it is very difficult for the enterprises to achieve a growth of the production volume and a high average level. However it should be pointed out that some enterprises manage to work all the time at the high average level. (Table 1) The profitability of the production sold by the meat branch in 2004 was 2.3 %.

Table 1.Profitability of the production sold by the enterprises in the meat processing branch,%

Region	**Year**				**2004 versus 2003, +/-**
	2001	**2002**	**2003**	**2004**	
Brest region	6.4	4.3	1.2	-1.2	-2.4
Vitebsk region	4.0	2.8	3.9	0.1	-3.8
Gomel region	11.9	6.6	5.6	3.5	-2.1
Grodno region	8	5.4	2.3	2.7	0.4
Minsk region	4.4	5.4	6.1	5.0	-1.1
Mogilev region	8.5	4.3	3.1	3.5	0.4
All regions	**6.9**	**4.8**	**3.6**	**2.3**	**-1.3**

Let us examine the situation in the meat processing works of the Grodno region. With regard to the amount of meat processed the Grodno region takes the 1st place, 30.8% of the

total volume of the animal live weight processed in the republic is processed there. It is represented by 5 meat works, i.e. the Grodno, Lida, Slonim, Volkowysk and Oshmiany meat processing enterprises.

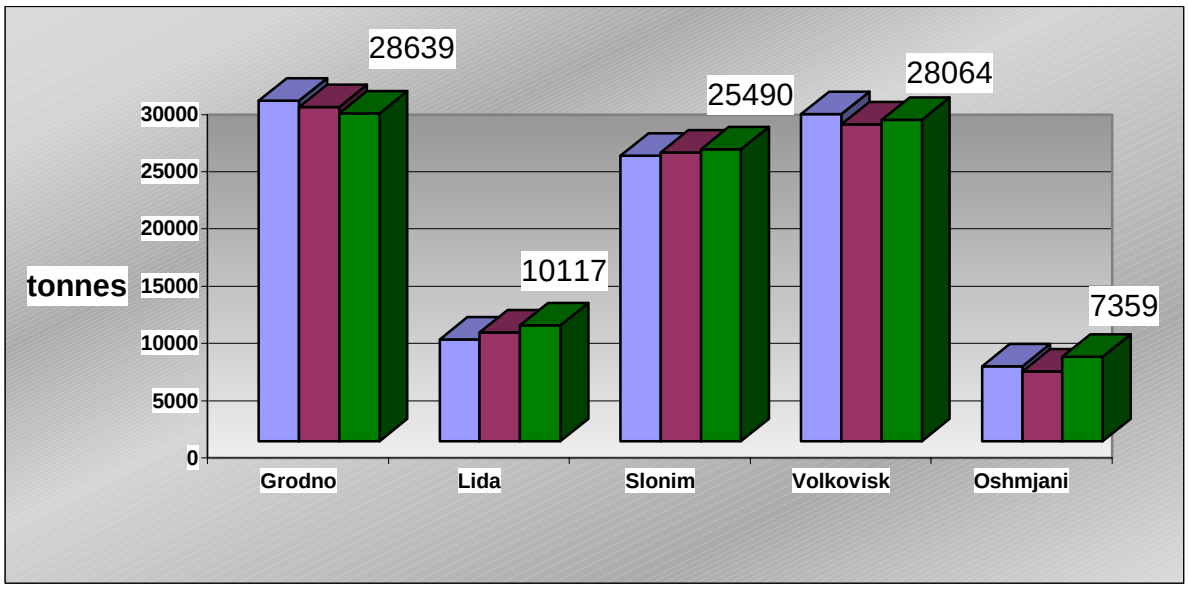

Figure 3. Animal live weight processed in the Grodno region in all the meat processing works (2002 – 2004)

From the data in figure 3 one can infer that the leading place is taken by the Grodno meat processing enterprise (28,639 tones) and the Volkowysk meat processing enterprise yields to it only a little. So in 2004 the processed volume was 28,064 tonnes, that is 1,4% more than in 2003. On the whole the Grodno region meat prcessing works processed 99,669 tonnes in 2004, that is 2,024 tonnes more than in the previous year.

The productivity of labour shows us the level of influence of the enterprise's equipment on the productivity. Labour productivity and its improvement are the topical problems now and the rate of production expansion and the satisfaction of demand depend on solving this problem.

From the available data one can infer that the lowest productivity of labour takes place in the Oshmiany meat processing enterprise (22860$). Volkowysk meat processing enterprise takes the 1st place in ranking of the level of productivity of labour (35630$) that in its turn influences the profitability of production.

Taking all above-mentioned into consideration let us examine the profitability level in the Grodno region meat processing works in 2004.

On the whole a positive tendency is observed in the Grodno region: as compared with 2003 all the meat processing works had in 2004 a profitable production level. This fact shows

us that in the future an improvement of the meat processing works activity effectiveness in all directions is quite possible.

The industrial meat production in the republic is at the level of 60% and 40% is produced in subsidiary enterprises, but at the same time the industrial meat production in the developed countries is higher than 90%. The level of the main industrial aassets wear in the meat processing works is in average about 50%. Their annual replacement is not higher than 3.1%, that is twice or thrice lower than necessary. Only about 15% of the equipment in the enterprises of meat processing industry is able to provide an output competitive in the world market.

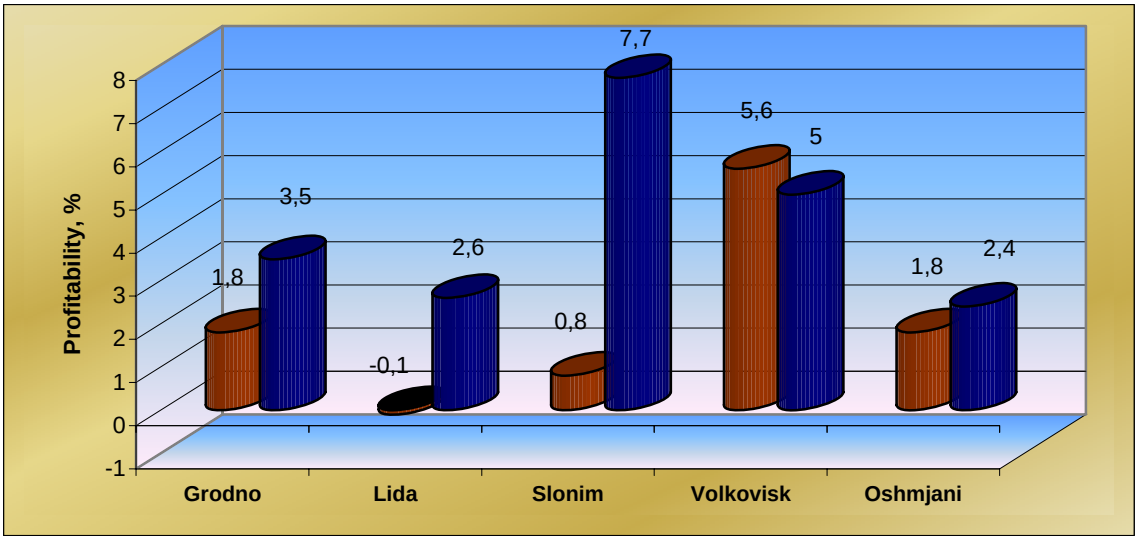

Figure 4. Profitability level in all the meat processing works in the Grodno region in years 2003 and 2004.

Let us examine the factors that influenced the given changes in indices. Let us do it with the help of grouping the meat processing works of the Republic of Belarus. Let us look at the table 2.

The best indices are reached in the third group: the profit from production is in average equal to the sum of 3,187.3 million roubles per firm and year, while the prime cost of production sold by the third group makes up 181.8% of the same prime cost of the first group. The profit of the enterprises in the third group is several times higher which shows more effective work of these enterprises.

Also the enterprises of the third group have the highest productivity of labour and consequently they have the highest wages of 330,978 roubles per month. The enterprises of the third group, which includes the Grodno meat processing enterprise, are all profitable and economically stable, but the further improvement of meat processing effectiveness is desirable.

Table 2. Grouping of meat processing works in the Republic of Belarus

Indices	Groups of enterprises according to the profitability (or loss) indicator level			Difference between group no 3 and group no1, %
	below 1.1	between 1.1 and 4.3	more than 4.3	
Number of enterprises in a group	9	12	6	--
Average profitability level, %	-0.9	2.7	6.2	+7.1
Animal live weight processed, tonnes	8172,0	11929.3	18626.3	227.9
Profit (loss), million roubles	-265.6	1169.8	3187.3	+538.1
Cost of production sold, million roubles	28435.7	42691.3	51698.8	181.8
Average monthly wage, roubles	246776.7	317069.5	330978.8	134.1
Productivity of labour, thousand roubles/day	33630.1	43512.8	56014.4	166.6

So on the grounds of the analysis made we can conclude that at the present stage it is necessary to look for new directions of improvement in meat processing effectiveness, to apply new achievements, to introduce the experience of the developed countries. But for all above mentioned development financial investments of the investors and the state are necessary. They will let the processing industry come to a completely new development level and the production will become competitive not only in the domestic market but in the world market too.

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