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**ВЛИЯНИЕТО НА ОСП ВЪРХУ РАЗВИТИЕТО НА СТОПАНСТВОТА,
ОТГЛЕЖДАЩИ ЗЕЛЕНЧУЦИ В БЪЛГАРИЯ
THE INFLUENCE OF CAP ON THE DEVELOPMENT OF VEGETABLE
PRODUCTION FARMS IN BULGARIA**

**Теодора Стоева
Teodora Stoeva**

Аграрен университет – Пловдив
Agricultural University – Plovdiv

E-mail: teodorastoeva@gmail.com

Abstract

Vegetable production is a traditional sub-sector of Bulgarian plant production. Vegetable production forms 15% of the gross output of Bulgarian agriculture which determines its importance for the agricultural sector in Bulgaria. The presence of favourable natural and climatic conditions, long-standing traditions, wealth of experience, development of new technological solutions as well as the use of modern cultivars of high biological potential outline the tendencies for market survival and development of the vegetable farms.

Vegetable production is classified as one of the vulnerable sectors of Bulgarian agriculture in applying CAP after 2015. The sector will receive financial assistance linked to the production. The challenges to the vegetable production as a sector of not a fully exploited potential are a subject of discussion at a number of scientific, professional and organizational forums.

The purpose of the article is to analyze the impact of CAP on the development of vegetable production in Bulgaria with a view to enhancing its competitiveness and sustainable development.

Key words: influence, vegetable production, development, CAP.

INTRODUCTION

In Bulgaria the cultivation of vegetable crops is a typical agricultural activity for many regions in the country except for the farms located in the mountain regions. The state of vegetable production is predetermined by the favourable natural and geographical conditions in our country, as well as by the rich experience in the production and cultivation of vegetables which are traditional for Bulgarians.

The state and development of this traditional Bulgarian sector has been deteriorating in comparison to other European countries with similar geographic and climatic conditions and territory. The *CAP* is directed towards the effective and sustainable development of agriculture in all member-states of the European Union (Bulgaria inclusive).

After the accession of Bulgaria to the European Union the basic goal of the ongoing policies has been a complete restructuring of the agricultural sector in accordance with the requirements of the Community.

The purpose of this article is to analyze the impact of the *CAP* over the development of vegetable production in Bulgaria with a view to enhancing its competitiveness and sustainable development.

MATERIALS AND METHODS

To achieve the objective set above, the statistical yearbooks and reference books of the National Statistical Institute (NSI) have been used as well as the agricultural reports of the Ministry of agriculture and food, newsletters of the Agrostistics Directorate to the Ministry of Agriculture and Food, and own researches. For the purposes of this research different information sources have been used – scientific journals, publications of Bulgarian and foreign authors, on-line periodicals as well as the author's own research.

RESULTS AND DISCUSSION

The application of the Common agricultural policy puts the competitiveness of Bulgarian agricultural production to a serious test - now it has to compete with the European production, which is relatively cheaper and more attractive in appearance.

The import of fruits and vegetables affects the structure and volume of Bulgarian agricultural production. Therefore, Bulgarian agricultural policy should have clear priorities for the development of the sector and its transformation into a competitive and highly effective branch of Bulgarian economy.

The purpose of this study is to conduct a comprehensive economic analysis of the current state of vegetable production in Bulgaria and more particular in the Plovdiv region. In accordance with the objective pursued the following tasks were outlined:

- to show the situation of vegetable production in farms of different size located in the Plovdiv region by defining the direct dependence of vegetable production on factors such as unit area, average yield, output, etc., highlighting the effects of various factors;
- To trace the change and dynamics of the indicators that are being analyzed;

The increase of the level of competitiveness as well as the specialization of agricultural production are main factors for a better functioning and greater vitality and sustainability of farms engaged in vegetable production; this is a prerequisite for market survival and development of vegetable farms.

Table 1. Cost and factors that determine its level in the production of 1 ton vegetable production

Crops	Cost BGN/ton	Average yield kg/dca	Prod. costs BGN/dca	incl.									
				Labour		Material BGN/dca	of them:						
				Man - days pcs/dca	BGN/dca		Seeds	Fertilizer	Plant protect.	Irrigation	Mechanization	Others	
Tomatoes	532,68	2683	1429,18	29,13	609,12	820,06	313	128,36	116,20	93,80	87	81,70	
Cucumbers	568,86	2756	1567,78	40	771,60	796,18	323	85,78	75,30	123,10	107	80	
Pepper	626,44	1816	1137,62	31,86	623,82	513,80	126	80,98	48,12	98,70	130	30	
Cabbage	259,38	2753	714,09	16,14	317,64	396,45	78	77,43	74,62	82,40	72	12	
Onions	443,08	1688	747,92	18,14	366,06	381,86	57	56,16	58,60	76,30	105	28,80	
Watermelons	260,57	2650	690,51	15,03	302,40	388,11	90	53,31	76,20	85,60	70	13	

Source: author's own research

The Plovdiv region is located in the South central region. The soil and climatic conditions favour the growing of almost all types of crops. The geographic location, the landscape and the variety of soil and climatic characteristics strongly influence and favour the development of agricultural production, which plays an important role for the economy of the region.

The cultivation and production of vegetables is a traditional agricultural activity in the Plovdiv region, which provides employment for the population in the region and profitability for the farmers.

During the period 2010-2013, there was an increase in the cost of all vegetable crops included in this research. It is due to the increase in the prices of the main raw materials used in vegetable production, such as fuels, fertilizers, plant protection products, increase in the price of water for irrigation, etc. There is an increase in the price of labour as well. There is an increasing trend in the level of material costs which, in case of preserving the level of average yields and the invested labour costs, would lead inevitably to an increase in cost. Resources must be sought for the implementation of more highly productive varieties and replacement of manual labour with mechanized one.

By using the method of Gauss of least squares the following correlation has been found between incomes, z (BGN/da), production costs, x (BGN/da) and average yields, y (kg/da) for tomatoes:

$$z = 0,18444x + 0,42791y - 624,62$$

Table 2. Mathematical model expressing the correlation between income, production costs and average yields in production of tomatoes in vegetable farms

Years	Z - values observed	Z t - theoretical values	Z - Z t deviation between the theoretical and observed values	Relative deviations (Z - Z t)/Z
2007	526,7	460,5	66,2	12.57%
2008	578,3	587,1	-8,8	-1.52%
2009	527,6	566,2	-38,6	-7.31%
2010	635,2	694	-58,8	-9.26%
2011	999,9	827,9	172	17.2%
2012	707,3	818,3	-111	-15.7%

The average relative deviation for the period 2007-2012 is – 0,67%. Elasticity is a measure of the response of one changed variable to another. The equation allows to express the elasticity of incomes in relation to the production costs:

$$E_x(z) = 0,18444x / (0,18444x + 0,42791y - 624,62)$$

We can express the elasticity of incomes in relation to the average yields by means of the following equation:

$$E_y(z) = 0,42791y / (0,18444x + 0,42791y - 624,62)$$

For $E_x(z) = E_y(z)$ we have the same elasticity of incomes in relation to production costs and average yields, i.e. for = 0,431 x.

Vegetable production is a very labour-intensive branch of plant growing sector. The challenges that vegetable producers face are associated with the cultivation and marketing of their vegetable production, which provides the biggest return on resources used in it.

Bulgarian vegetable production has been experiencing considerable difficulties in adapting to the new market situation ever since 2007 and it finds it difficult to develop its economic and industrial potential. The membership of Bulgaria in the EU has made the *CAP* a key factor for the development of Bulgarian agriculture and more particularly, of vegetable production.

In vegetable production there are a number of organizational and economic issues such as: lack of good organization in the production sector characterized by a low technological level; production with high costs, including high prices of seeds, fertilizers, plant protection products, irrigation water; lack of mechanization and use

of human labour in harvesting. Producers' low degree of organization, lack of commercial arrangements between producers and dealers regarding the realization of output, low buying-in prices of vegetables, use of low-skilled workers – all these are significant organizational and economic issues of the sub-sector waiting to be resolved for many years.

CONCLUSIONS

1. The priorities and challenges facing the Bulgarian vegetable production after the accession of our country to the common European market in 2007, are connected with the opportunities for market survival, the overcoming of the low competitiveness of agricultural production as well as with the perspectives for sustainable development of this traditional sub-sector of Bulgarian agriculture. Bulgarian vegetable production has been subjected to a constant pressure by the competitive import of cheap vegetable production from other European countries. The ability and activity of vegetable producers to form professional organizations is a guarantee for the strengthening of the market positions both of the vegetable sub-sector as a whole, and the positions of the individual farmer as a contracting party in the process of supply and demand.

2. By creating professional associations and organizations vegetable producers would have much greater opportunities for market research as well as for better realization of their production that would comply with the high quality and quantity requirements of the commercial chains. The membership of vegetable producers in organizations would strengthen their positions in fixing the purchase prices and realization of production thus it would strengthen the relationship between them and the traders.

3. The stimulation of farmers to aim at competitive and quality vegetable production in conformity with the requirements of the European markets and consumers, as well as the availability of opportunities for sustainable development of specialized vegetable farms, should be a priority of the Bulgarian agricultural policy.

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