

Opportunities and Trends for Development of Vegetable Production in Rural Areas

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Възможности и тенденции за развитието на зеленчукопроизводството в селските райони

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Зеленчукопроизводството е специфичен сектор от аграрното производство. То се отличава с богат набор от култури, голяма част от които с важно икономическо значение.

В последните години се установява трайна тенденция за намаляване на реколтираните площи и реализиране на средни добиви далеч от биологичния потенциал на отглежданите сортове. Често получаваната продукция е и със слаба конкурентоспособност спрямо нарастващите изисквания за качество на общия европейски пазар.

Наличието на подходящи почвено-климатични условия, дългогодишните традиции, богатият практически опит, наличието и разработването на нови технологични решения и пазарно-ориентирани нововъведения, използването на съвременни сортове с висок биологичен потенциал очертават благоприятни тенденции за развитие на зеленчукопроизводството. Те разкриват възможности за по-широкото застъпване на отрасъла в селските райони, за постигане на високоефективно, екологосъобразно и конкурентноспособно производство.

Целта на настоящата статия е проучване възможностите и тенденциите за развитие на зеленчукопроизводството в селските райони, с оглед на подобряване на икономическите резултати.

Introduction

Vegetable production has always been a specific sector of agricultural production. It is distinguished for its great variety of crops, most of them of important economic significance. Recently, we have been witnessing a lasting trend of decreasing harvested areas and realization of average yields which is far from the biologic potential of the cultivated crops. Often, the production harvested is of weak competitiveness in view of the increasing quality demands of the common European market.

The availability of suitable soil and climatic conditions, the long-lasting traditions, rich prac-

tical experience, the existence and development of new technological solutions and market-oriented innovations and the utilization of contemporary varieties of high biological potential outline favorable trends for the development of vegetable production.

The aim of this article is to explore the opportunities and trends for development of vegetable production in rural areas so as to improve the economic performance.

The vegetable production has been 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. Competitiveness and sustainable devel-

opment of production are the basic priorities of Bulgarian agricultural policy.

Materials and methods

Bulgarian policy on development of rural areas is entirely subordinated to the principles of the European Union (EU). The priorities of this policy are as follows: preserving the vitality of rural areas by means of balanced social and economic development, improving the quality of life, protecting the environment and cultural and historical heritage. According to the national definition a rural area is any municipality in which there are no towns which population exceeds 30 000 people. (Rural Development Program 2007–2013) Rural areas in Bulgaria occupy 81% of the total territory of the country, 82.7% of the agricultural land and 83.2% of the forest territory while human resources are 42% of Bulgarian population by 2010 (acc.to Hristova, 2014).

Economic development in rural areas is closely related to agriculture and is committed to preserving environmental balance; conservation of soils and water resources; increase of areas cultivated by applying the organic production method; conduct of anti-corrosion practices; prevention of future land abandonment; preservation of biodiversity and increase of forest resources.

According to Cholakov (2009), the reasons for the uneven and sometimes negative development of vegetable production in our country over the last 10–15 years are complex – they are of organizational, socio-economic and technological nature. To a greater degree the overcoming of the negative trends in this sub-sector of agriculture will depend on the strengthening and renewal of agricultural equipment and facilities, long-lasting and reliable solution to the problem of efficient marketing of vegetables – fresh and processed both on domestic and foreign markets. The most recent issues of selection and technology must be scientifically resolved in due time by using the opportunities offered by scientific institutes in the country and in the most developed countries.

The improvement of economic results obtained from vegetable production and its recognition as a profitable and lucrative sub-sector of agriculture

requires the implementation of cost-effective technologies for cultivation of vegetable crops which provide opportunities for obtaining high yields of high quality products at a low cost.

The prerequisites on which the development of vegetable production depends differ in importance. They can be divided in three main groups: environmental factors, economic factors and subjective factors (acc.to Kartalov et al., 1990).

Considering the first group of factors related to environment, heat is the most important one. Heat conditions determine the area size, types and varieties of vegetables as well as the timing for sowing and planting vegetable crops in each specific area. The heat conditions in our country are suitable for growing both heat-loving and cold tolerant vegetables throughout the whole year or during a part of it.

Soil is of a paramount importance in growing vegetables. It is necessary the choice of areas for vegetable gardens to comply with the terms of production and the specific requirements of vegetable types and varieties.

Solar radiation is also one of the main climatic factors that affect the development of vegetable production. Climatic characteristics of our country (Journals of Climate in Bulgaria, 1979, 1983, 1990) show that as early as February/March sunshine intensity and duration are within such limits that correspond to the biologic requirements of a large number of vegetables.

Precipitation as a prerequisite for the maintenance of soil and air humidity is of a paramount importance for the distribution of vegetable crops. Their irregularity however affects the set of crops and the technologies applied.

In economic terms, the importance of vegetable production for the contemporary Bulgarian agriculture is expressed in profitability for the producers as well as in ensuring employability of the workforce in agricultural sector.

After the accession of Bulgaria to the European Union, there has been a significant increase of the efficient use of the opportunities provided by the Common European policy in the field of agriculture. The state and development of this traditional Bulgarian sector have been deteriorating in comparison to other European countries

with similar geographic and climatic conditions and territory. Over the years Greece and Turkey which are our neighbors have outdistanced Bulgaria in this traditional production – in 2008 the vegetable production in Greece was approximately 7 times bigger than the one in Bulgaria.

The production of fresh vegetables is of a greatest significance for the sector. The structure of fresh vegetable crops is formed mainly of tomatoes, peppers, cucumbers, cabbage, onions, etc. (Table 1). There is a decrease in production of almost all vegetable crops. Despite this adverse trend, vegetable production forms 1/3 of the gross output of plant-growing and 15% of the total gross output in agriculture. The analysis of the total vegetable production for the period 2001–2012, as well as the production of the main vegetable crops, illustrates that the total production of vegetables follows the unfavorable trend of permanent decrease of production output. The production of tomatoes, peppers, cucumbers, potatoes and onions reached its lowest point in 2012 compared to 2001.

There is a clear decline in vegetable production as a whole and on major crops. For the period 2001–2012 the state of vegetable production was constantly deteriorating thus showing the deep crisis in this traditional sector of Bulgarian agriculture. The production of vegetables is far below the level of the years preceding 2007 when it created a value of about and over BGN 1 billion.

We consider that the reasons for the low level of efficiency in the production of vegetables and the relatively weak competitiveness of vegetable production observed after the accession of the Bulgarian to the EU in 2007 are rooted in the failure of the land reform. As a result of this reform, small-sized farms which are ineffective due to the low degree of specialization, insufficient availability of agricultural equipment and modest level of production organization, dominate the structure of specialized vegetable outdoor farms. The strong competition of vegetable production from other European countries after the accession of Bulgaria to the Common European market in 2007 and the imports of fresh vegetables put additional pressure over Bulgarian vegetable production.

Results and discussion

The crisis, in which our vegetable production is, as well as the constant price increase of the main vegetable crops and the lagging incomes of the population reveal the negative trends associated with consumption and demand of vegetables by Bulgarians. The reduced domestic production of vegetables is unable to satisfy the demands on Bulgarian market which requires the import of vegetables from countries neighboring to Bulgaria. Bulgaria once used to be a traditional exporter of vegetable production, now it has become an importer.

Table 1. Production of main vegetable crops for Bulgaria (in thousand tons)

Years	Total vegetables	Tomatoes	Pepper	Cucumbers	Potatoes	Onions	Cabbage
2001	1567.4	272.6	141.3	62.5	600.4	36.0	138.5
2002	1583.5	221.4	164.6	73.5	627.3	38.0	109.4
2003	1834.5	398.0	208.6	56.1	450.1	42.2	138.0
2004	1590.0	238.0	125.9	87.0	573.0	45.0	117.0
2005	872.6	126.4	72.1	44.7	375.5	14.3	69.3
2006	1182.9	212.9	156.7	61.5	386.0	20.2	72.6
2007	803.5	133.2	81.7	57.2	298.7	10.6	50.0
2008	874.3	134.1	59.5	62.6	353.6	16.1	64.9
2009	734.9	104.2	71.5	78.0	231.7	8.22	39.4
2010	356.5	114.6	69.1	65.7	251.2	19.1	78.9
2011	368.0	103.1	66.3	58.6	232.3	16.6	44.6
2012	275.8	94.0	47.1	33.7	151.3	10.3	47.3

Source: Ministry of agriculture and food, Agrostistics Directorate 2001–2012.

The import of certain crops at relatively low prices from neighboring countries such as Turkey and Greece where the climatic conditions are more favorable nearly throughout the year exerts pressure on Bulgarian production. Bulgarian producers appear later and later on the market when prices are the lowest and that has an adverse effect on their income. Late supply of products creates market niches which are filled by import of vegetables thus pressing further the local production.

Another typical feature of the vegetable production in open fields is that a large part of the agricultural farms are relatively small in size, which in turn leads to lower average yields from unit area and reduces the competitiveness of production.

The fragmentation of basic production resource – the land, the inevitable dependence of vegetable production on geographic and climatic conditions, the outdated agricultural equipment, the low level of mechanization of production process and the low wages of the employees employed in vegetable production are just a small part of the current issues in this traditional Bulgarian sector of agriculture.

A feature that is important is the relative stability of fixed costs due to the specific nature of the production – investments are made despite the uncertainty of good agricultural output or a failure of the production. Incomes, on the other hand, are characterized by a constant uncertainty given the seasonal nature of vegetable production, permanent relationship between monetary incomes and the quantity of marketed vegetable production and its dependence on the quality and the deadlines for its realization on the market.

A distinctive feature of vegetable production is the high degree of risk due to the extremely short shelf-life of the products combined with in-

creased sensitivity to temperature changes, diseases and pests, transport and others, which makes vegetable crops perishable products, difficult for market realization.

There is a reduction in the total area of open fields – in 2007 vegetables were grown in 556300 decares while in 2011 this figure reduced to 456790 decares (Table 2). After 2007 the trend of reduction has intensified as vegetable crops have been almost left without support under the Common agricultural policy and the aid granted by the State Fund Agriculture is highly inadequate and as a result the farmers gradually have given up on this production.

The economic importance of vegetable production should be considered in the aspect of possibilities offered in our country by the favorable soil and climatic conditions for obtaining an earlier production. A part of it can be realized on foreign markets.

As a group, the subjective factors represent the role of the State, its local authorities and representatives, as well as the role of the professionals and direct producers. All of them with their knowledge and skills contribute to the development or limitation of vegetable production. These factors are in a constant interaction with one another, especially with the economic ones.

Depending on the economic efficiency and soil and climatic conditions necessary for vegetable growing in open fields there are separate strands in production according to the intended use of the products and the way of growing vegetables.

The level of average yields of the vegetable farms in Plovdiv region for the period 2007–2012 is a major factor that influences the effectiveness of filed vegetable production. Table 1 presents the average yields of the main vegetables grown in Plovdiv region over the period from 2007 to 2012.

Table 2. Structure and dynamics of areas in Bulgaria planted with vegetable crops for the period 2007–2011 (da)

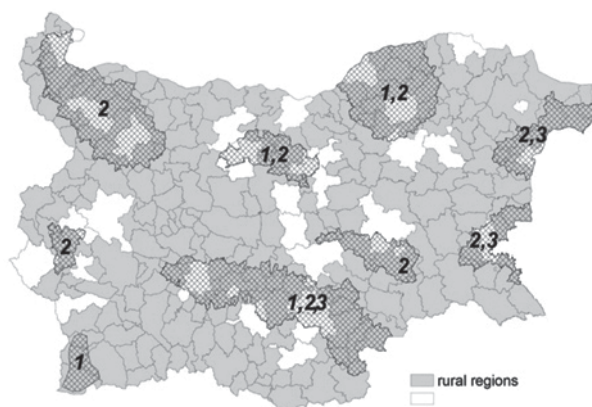
Base areas	2007	2008	2009	2010	2011
Open fields	556300	530370	465260	421620	456790
Total of greenhouse areas	10540	9960	9500	10280	10590
Total area	566840	540330	474760	431900	467390

Source: *Agricultural reports, 2007–2011, Ministry of agriculture and food, Agrostistics Directorate 2007–2011.*

It is notable that during the survey period the average level of yields in-creased for almost all vegetable crops. The lower average yields had an adverse effect on the production effectiveness since they reduced the incomes of farmers who cultivated vegetables.

Field vegetable production occupies a major part of the arable lands and is distributed all over the country. Its leading role is due to the fact that it can be organized with less capital investments, it is open to mechanization to a much greater degree and the production is often with a higher biological value.

Three production strands are distinguished in field production itself – early, medium early and late production. The distribution by regions of the possibilities for the organization of respective production strands is presented in Fig. 1. To a greater extent, geographic and climatic factors



1 - early field production; 2 - medium early field production; 3 - late field production

Fig. 1. Regionalization of production strands in field vegetable production

Source: Kartalov et al., 1990 (Rural Development Program 2007–2013).

determine the regional specificities in the specialization in the sub-sector.

Greenhouse vegetable production can be considered as an addition to the outdoor vegetable farms since it complements field production and in some vegetable crops the period of marketing is thus extended when combining field and greenhouse production. At the same time it is relatively independent of weather conditions while the fluctuations in the quantity of produced vegetables are influenced by pure market mechanisms on a yearly basis.

Conclusion

In conclusion, it is worth noting that in majority of rural areas there are prerequisites and real opportunities for development of vegetable production as a part of the general agricultural production. The suitable soil and climatic conditions, the economic, social and subjective factors enable its wide distribution in these areas in order to achieve high efficiency, environmentally sound and competitive production, combined with sustainable development of these regions.

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Table 3. Average yields (kg/dca) of vegetable farms in Plovdiv region for the period 2007–2012

Crops	2007	2008	2009	2010	2011	2012
Tomatoes	2120	2410	2340	2490	2804	2755
Cucumbers	3695	3536	3797	3210	2970	2088
Peppers	1900	1956	1895	1850	1730	1868
Onions	1710	1736	1783	1702	1690	1672
Cabbage	3120	2990	3064	2870	2710	2670
Water-melons	2830	2868	2868	2790	2840	2320

Source: Own research.

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(Summary)

Vegetable production has always been a specific sector of agricultural production. It is distinguished for its great variety of crops, most of them of important economic significance.

Recently, we have been witnessing a lasting trend of decreasing harvested areas and realization of average yields which is far from the biologic potential of the cultivated crops. Often, the production harvested is of weak competitiveness in view of the increasing quality demands of the common European market.

The availability of suitable soil and climatic conditions, the long-lasting traditions, rich practical experience, the existence and development of new technological solutions and market-oriented innovations and the utilization of contemporary varieties of high biological potential outline favorable trends for the development of vegetable production. They reveal opportunities for broader integration of the sector in rural areas for the achievement of highly efficient, sustainable and competitive production.

The aim of this article is to explore the opportunities and trends for development of vegetable production in rural areas so as to improve the economic performance.

Key words: vegetable production, opportunities, trends