Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development
Vol. 13, Issue 3, 2013
PRINT ISSN 2284-7995, E-ISSN 2285-3952

THE EVOLUTION OF FRUIT AND VEGETABLE SECTOR IN ROMANIA, IN THE CURRENT ECONOMIC CRISIS

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Abstract

This paper is a study that has as main objective the diagnosis of fruits and vegetables sector in Romania and identifies realistic and feasible measures and actions to reduce the negative effects of the financial crisis, manifested in this sector. This paper is structured in two parts. The first part of the paper is intended to describe fruit and vegetable chain, being a detailed analysis of the current situation of fruits and vegetables sector in Romania, showing the effects of the crisis in this sector. The second part proposes a series of realistic and feasible measures and actions for risk reduction and recovery in the sector affected by the manifestation of the economic crisis.

Key words**:** *agro-food chain, crisis, efficienc, fruits and vegetable sector, risk*

INTRODUCTION

The importance of the subject lies in the very importance of the horticultural sector, providing heavy-duty products for consumption, due to their sensory characteristics and essential nutrients they contain. It is also important to look at this sector for better exploitation of the potential of Romania to ensure these products internal, in order to increase the contribution to GDP and to increase farmers' incomes while reducing the share of imports of fruit and vegetables.

This research paper addresses the issue of reducing the effects of the financial crisis on fruit and vegetable chain into three evolutionary stages, structured in two parts of the study: the first part analyzes in detail the fruit and vegetable sector in Romania and identifies the main negative effects of the financial crisis that impacted on sector growth, and the last part contains a number of conclusions drawn from the study and proposals to overcome the crisis effects and improve overall performance within the sector.

MATERIALS AND METHODS

The methodology of this research involved a documentary synthesis, analysis and interpretation of statistical data collected from Tempo on line database [2], EUROSTAT [1] and FAOSTAT [5], and implementing a set of conclusions and suggestions for improvement based on the analysis performed.

RESULTS AND DISCUSSIONS

1.Analysis of current situation of fruits and vegetables sector in Romania

Within agriculture, horticulture is one of the most intensive sectors and its increased level is based on the extent of the culture change system, species and varieties, as well as increasing the size of additional investment in this area. This process of intensification of horticultural production concern one or more species, depending on the use of more productive varieties and higher quality for optimal use of doses of fertilizers and pesticides, their use in compliance with all agro-technical rules on vegetable crops and fruits.

This feature specific to orchards and vegetables, as a branch of high intensity,

producer of food required for consumption and substantial gainful for those who practice in accordance with the practice of proper and efficient management and marketing, has boosted its expansion in countries with high agricultural potential and have the appropriate climatic conditions, as is the case of Romania.
Vegetables and fruits are foods of plant origin with an important role in the diet, because of their sensory characteristics and precious nutrients they contain, in the form of carbohydrates, vitamins, organic acids, mineral salts, etc. If in the past they were consumed more for a survival instinct, now food science considers fruit and vegetables as a means to improve food, an indispensable asset in producing a balanced rations due to the wealth of nutrients and their beneficial role they have on the normal body functions and maintaining health.
The present situation of fruit and vegetable sector in Romania is a critical, first because of the effects of the financial crisis and second because of the high level of imports. Statistics show that the market supply of vegetables and fruits in Romania is made at a rate of about 70% of imported products. This percentage is quite high also because Romania is a net importer of exotic fruits, which are not produced domestically.
In order to rightly diagnose the current situation of fruits and vegetables sector in Romania, it is necessary to analyze the key indicators of the industry.

2.Area planted with vegetables and fruit trees

Next, it is analyzed the evolution of area planted with vegetables and fruit trees in our country.
The analysis of the data presented in Table 1 and Figure 1 shows a number of findings.
In the period under review, the largest area planted with vegetables was recorded in 2006.
The evolution of areas planted with vegetables showed an oscillating trend, marking the lowest level in 2007.
In 2008 -2010, the overall evolution of areas planted with vegetables had significant variations, marking a pronounced downward trend.

Table 1. Area planted with vegetables and fruit trees 2005-2011(thousands ha)

	2005	2006	2007	2008	2009	2010	2011
Total vegetables :	**266,7**	**280,1**	**250,0**	**268,1**	**266,1**	**262,2**	**263,4**
Tomatoes	46.4	49,9	45,9	51,4	48,9	49,7	51,8
Onion	35,4	33,6	33,9	34,8	35,1	33,7	33,1
Garlic	12,4	13,0	11,4	13,7	13,1	12,8	12,1
Cabbage	54,6	45,7	46,5	49,2	48,4	47,2	46,9
Pepper	19,0	23,0	18,6	20,2	20,0	21,0	20,0
Fruit trees**	**218,2**	**213,4**	**215,8**	**207,3**	**205,2**	198,6	196,1

Source: FAOSTAT, National Statistics Institute, Eurostat

The graphical illustration of the data presented in Table 1 is shown in Figure 1

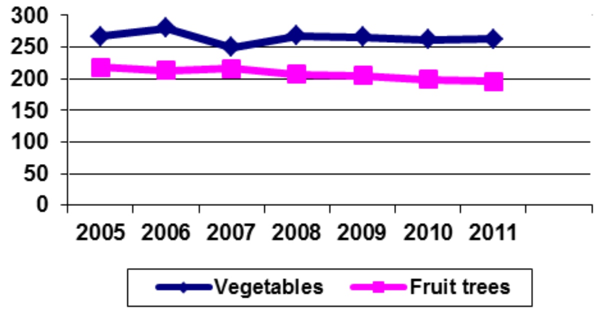

Fig. 1 Areas planted with vegetables and fruit trees

This may be due to the impact of economic - financial crisis, which had negative effects on our country in all economic fields. The crisis contributed to lower incomes for the farmers, which resulted in lower financial power to establish crops in 2009 and especially in 2010. 2011 is a year of recovery from this point of view, areas cultivated with vegetables posting positive developments over the previous year.
It is also noted that the largest share in the total area cultivated with vegetables is own by tomatoes, reaching a rate of 19.6% of the total in 2011.
In contrast, the lowest share is garlic, which owns approximately 2.8% of the total area cultivated with vegetables.
In terms of area occupied by trees, its evolution has significant variations. It is noted, however, a sharp downward trend of fruit trees, after 2007, reaching to 90.8% in 2011 compared to 2007. This phenomenon

can be explained by the lack of financial funds necessary for maintaining orchards, because of the manifestation of the economic crisis during 2008 to 2011.

3. Fruits and vegetables production

Next, we analyze the production of vegetables and fruits obtained in Romania from 2005 to 2011. The data are presented in Table 2.

Table 2. Fruits and vegetables production during 2005 – 2011 (thousands tonnes)

	2005	2006	2007	2008	2009	2010	2011
Total vegetables :	**3624,8**	**4143,3**	**3118,4**	**3820,9**	**3902,4**	**3866,9**	**4176,3**
Tomatoes	626,9	834,9	640,7	814,3	755,5	768,5	911,0
Onion	363,6	390,6	324,9	395,5	378,1	369,1	394,3
Garlic	68,3	64,2	49,9	72,3	63,2	67,2	66,6
Cabbage	1011,6	899,2	967,6	1004,1	983,6	981,2	1025,3
Pepper	203,8	279,1	184,9	238,7	245,7	243,5	253,5
Fruit trees	**1647,0**	**1486,4**	**1085,8**	**1179,2**	**1323,0**	1419,6	1479,9

Source : FAOSTAT, National Statistics Institute

The graphical representation of data from Table 2 is shown in Figure 2.

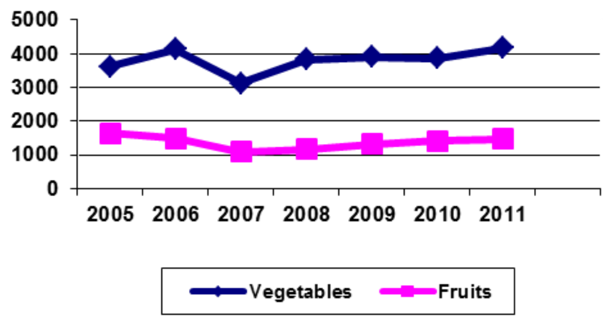

Fig. 2 Vegetables and fruits production

The analysis of data presented in Table 2 and Figure 2 shows a number of findings. Vegetable production had between 2005 to 2011 an oscillating evolution, having maximum value in 2011. At the opposite end is 2007, when output reached its lowest share of the period.

Between 2008 to 2010 there were significant variations, although production has not reached the volume recorded before the crisis (in 2006). Therefore, this crisis resulted in reduced production of vegetables, due to the lack of funds for making timely tillage necessary, especially for small farms with lack of financial capital. It is also noted that in the structure of vegetable production, the largest share is held by tomatoes, with approximately 27.8% of the total. This is justified, on the one hand by the fact that tomatoes have the highest share in the total area cultivated with vegetables (Table 1) and on the other hand, because is a type of intensive culture. In contrast, the lowest culture is garlic, which has the lowest share in the structure of production of vegetables (about 1.3%) of the total;

In terms of fruit production obtained during 2005 - 2011 there is an oscillating trend with decreasing values during 2005 - 2007 and increasing at a relatively slow trend from 2008 to 2011.

4.Fruits and vegetables consumption in Romania

For a relevant analysis of fruit and vegetable sector, it is necessary to correlate the production with the consumption of these products.

Table 3 presents the evolution of average consumption/capita of fruit and vegetable consumption in Romania and the calculation of the total consumption.

Table 3. Fruits and vegetables consumption in Romania

Indicator	2005	2006	2007	2008	2009	2010	2011
Average consumption of vegetables (kg/inhabitant)	162,6	181,7	164,1	176,0	168,2	174,4	181,0
Average consumption of fruits (kg/inhabitant)	75,9	83,2	67,8	66,7	62,3	63,3	70,5
Total population (millions)	21,6	21,5	21,5	21,5	21,4	21,4	21,3
Total consumption of vegetables (thousands tonnes)*	3512,1	3906,5	3528,1	3784,0	3599,4	3732,1	3855,3
Total consumption of vegetables (thousands tonnes)	1639,4	1788,8	1457,7	1434,0	1333,2	1354,6	1501,6

Source: National Statistics Institute; Own calculations

From the data analysis presented in the table, it can be made a number of findings. The average consumption of vegetables / capita registered a fluctuating trend during the period under review, registering the lowest value in 2005. Also, it can be seen that during 2007 - 2009 vegetable consumption showed lower values than in the years preceding the crisis (2006), which means that the negative effects of the crisis were felt in the consumer segment.

Average consumption of fruit / capita registered a fluctuating trend during the period under review, with the highest value in 2006. During 2007 - 2010, the average consumption of fruits showed a downward trend from 2006, the period of recovery being manifested in 2011, when fruit growth rate is significant compared to previous years. Next, it will examine in Figures 3 and 4 the evolution of fruit and vegetables fruit and vegetable consumption trends to highlight the coverage of demand from domestic production between 2005 to 2011.

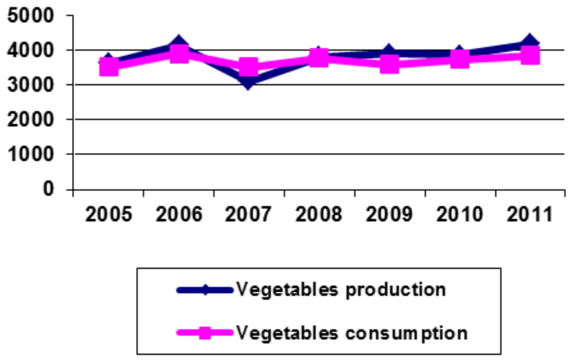

Fig. 3 Comparative analysis of vegetables production and consumption

Through the analysis presented graphically in Figure 3 it can be concluded that, with the exception of 2007, in the entire period, the domestic production of vegetables could sustain consumption. However, there is a relatively high share of imports of vegetables, which is caused, on the one hand by seasonality, and on the other side of the barriers of small producers to in large retail chains, which mainly have supply contracts with foreign producers.

Economic-financial crisis deepened further this imbalance, which is disadvantageous for both local producers (who can not sell all the production in the market) and consumers (who are forced to purchase poor quality products or at disadvantageous prices).

Unlike vegetables, fruit consumption has exceeded almost each of the years analyzed the domestic level. This is the effect of the marketing of exotic fruit category, which can only be purchased from imports.

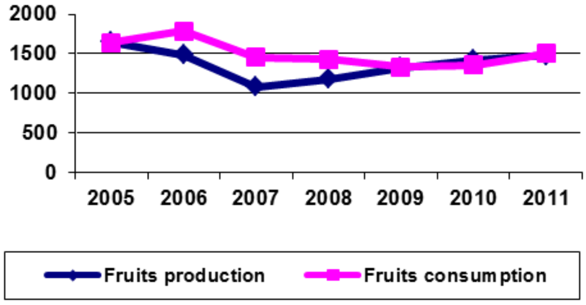

Fig. 4 Comparative analysis of fruits production and consumption

Nevertheless, we believe that it should be stimulated the domestic consumption of fruits, as it ensures a higher proportion of necessary vitamins and nutritional and sensory qualities higher due to freshness. Also, the fruits from local production can be traced throughout the chain.

CONCLUSIONS

Romania has a great potential for the production of vegetables, mainly due to high natural fertility of soils and climate diversity. Besides climatic conditions favorable for fruit and vegetables Romania still lacks agriculture technical requirements and features characteristic of a developed economy.

The data provided by National Statistics Institute show that both vegetable and fruit farms predominate with an average area of 3 ha. The situation is quite critical when have to consider that over 90% of these are managed by individuals who can not effectively manage the emerging risks, particularly in crisis. This explains the low level of technology holdings, training of farmers, organization of production and large quantities of fruits and vegetables sold at farm gate or street trading networks, also because there are barriers to input in major retail chains, which thus protects its external suppliers.

The production potential of the sector is affected for the following reasons:

-large number of small farms;

-low level of endowment of holdings with modern technical equipments of production and harvest;

-decreasing the area planted with vegetables and fruit trees and bushes;
-high degree of fragmentation of vegetables and fruit surfaces and the lack of a coherent land consolidation;
-low level of rejuvenation of orchards associated with large areas of old orchards;
-large areas of protected areas abandoned and / or built based on outdated techniques;
-increased frequency of extreme weather events with high impact on production;
-lack of management and marketing knowledge to assess and counter the economic risks, especially in the current crisis.
Also, as risk factors amplified by the crisis in fruit and vegetables sector may be mentioned:
-extreme weather events and various diseases and pests;
-imports from European and Asian countries mainly affecting fruit and vegetable market;
-various media articles that send incomplete and incorrect information about the importance of fruit and vegetables.
Most times, the processing industry was the main outlet for absorbing excess production, due to lack of vertical integration of the sector by establishing permanent contractual relations between producers and processors. Hence it may be inferred that fresh produce chain is more vulnerable to risk factors, regardless of nature, rather than processing industry.
Given the small size of the fruit and vegetable farms and farmers lack of experience in relation to harvest insurance system against risk prevention mechanisms and risk management plays a very important role in decreasing the producers' incomes. Given the small number of farmers who conclude insurance policies of fruit or vegetables, we can say that the adverse effects of vegetables and fruit plantations of climate phenomena and diseases, and pests, or even not-selling risk as a result of decrease in purchasing power of people (such as the current crisis) are all borne by producers. The number of holdings which provides crop is very low in these conditions for fruit and vegetable sector and it can not speak of a system of crop insurance. The causes are many but the most important deficiencies are:

- Lack of interest from producers;
- Lack of attractive offers / flexible by insurance companies;
- Lack of collective approaches;
- Lack of concern by the government to create a guarantee fund involving the state, insurance companies and manufacturers.

There are some large companies that produce about 40% of the national production of vegetables and about 25% of fruit production. But most of the production of vegetables and fruits in the country is done by small producers, who own and cultivate areas between 0.3 to 2 ha per farm. Their products are offered on the open market street in urban areas. Usually small manufacturers limit their production to sales capacity, because production costs are high and incomes are decreasing every year.
Another factor that reduces income and therefore the production of small and medium enterprises has been the emergence of intermediaries who created the "gray market." They buy products under production cost, which make harder the activity of producers, especially in crisis situations when consumption is lower.
In this context, the reorganization of production-marketing system of fruits and vegetables for the efficient use of pedo-climatic conditions available to Romania, while improving the socio-economic and rural areas and appropriate professional managing risk to overcome crisis, is a priority for recovery and future development of the sector.
It is necessary to establish measures to improve the production and recovery the local fruits and vegetables sector. Given the very high production potential, tradition, quality of soil, climate, plasticity species and varieties of fruit trees, vegetable species, labor and sales market, we can say that there are optimum conditions so as to be able to ensure the supply of the population with about 80% of consumption. This can be supplemented with imports during the extra-season, and

obviously with exotic fruits (citrus, bananas). These coherent and pragmatic measures proposed should focus on the following priority actions to reduce risks of any kind in the crisis:

1.Increased competitiveness: given the low level of knowledge of marketing, product competitiveness can be ensured through training programs, promotion of applied research and optimizing production costs. Also, investment is needed in technology that lead to the creation of added value of fruit and vegetables, concentrating supply and marketing networks infrastructure improvements.

2.Reduce production costs, stabilize producer prices, production planning and supply: given concentrating tend to offer fruits and vegetables at Community level is important for producers to plan and better adapt the supply to market demand (product quality, quantity, regularity and short delivery terms, the principles of traceability). Increasing the number of producer organizations and the degree of professionalism of the staff can determine indirectly increase of producers' incomes. Also, professional agreements can play an important role in balancing supply and demand in the market with positive effects. From here we can deduce the need to stimulate the development of inter-professional organizations as partners in shaping market policy. If inter-branch organizations are able to engage in solving technical and technological problems of producers through a partnership with networks of research, development and innovation of universities, they can stimulate the growing importance of applied research and the degree of innovativeness of farmers.

3.Promoting products: to encourage the sale of fruit and vegetables should be a structured approach to promotion. Promotion of fruit and vegetables has a long term impact on consumption and is one of the most important measures that should be taken by producers.

4.Prevention and crisis management: vegetables and fruits are sensitive to fluctuations in market prices. Thus it is important to prevent and combat market crises. Therefore it would be desirable for producer organizations:

-to stimulate by promoting further dissolution;

-to organize their qualifications, for example in quality systems, marketing, stimulating selling, etc.

-making crop insurance for its members.

5.Increased production potential: it can be done by increasing the high technology level and market orientation of farms.

REFERENCES

[1]EUROSTAT, www.eurostat.ec.europa.eu;

[2]Institutul National de Statistica, 2012, Anuarul Statistic al Romaniei;

[3]Manole, V., Boboc, D., 2005, Filiere agroalimentare, ASE, Bucharest;

[4] Manole, V., Stoian, Mirela, 2004, Marketing, ASE, Bucharest;

[5] Organizatia Natiunilor Unite pentru Agricultura si Alimentatie, www.faostat.org

[6]Programul National de Dezvoltare Rurala, www.pndr.ro

[7]Strategia nationala pentru programele operationale in sectorul de fructe si legume.