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Perceptions and clustering of Greek farmers on the new CAP: Opportunity or threat?

George Theodossiou[1*], Christos Karelakis[2] and Apostolos Goulas[3]

[1]Department of Business Administration, Tei of Thessaly School of Business and Economics, TK 41110 Larissa, Greece.
[2]Department of Agricultural Development, School of Geotechnical and Forestry Sciences, Democritus University of Thrace, Orestiada, Greece.
[3]Department of Planning and Regional Development, University of Thessaly, Larissa, Greece.

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This study aims to highlight the problems of the Greek agriculture and to identify the level of information that the farmers have regarding the Common Agricultural Policy (CAP). Here, primary data were collected from in-depth interviews (structured questionnaire) with 241 farmers in the region of Thessaly-Greece. The study was conducted in November 2016, within the geographical boundaries of the Region of Thessaly. The data were analyzed via descriptive statistics, the non-parametric Friedman test, Factor Analysis and Cluster Analysis. The results indicate that Greek farmers are not adequately informed about the CAP. The research findings showed that Greece requires an agricultural sector that will also be eco-friendly, producing high added value products. These factors are important and could become the country's comparative advantage. The innovation of the study lies in the fact that the survey was conducted in a highly representative Greek rural prefecture, investigating the farmer's information level as it concerns the CAP policy schemes.

Key words: Common agricultural policy, agricultural sector, agricultural production, Thessaly, Greece.

INTRODUCTION

The Common Agricultural Policy (CAP) is the agricultural policy implemented by the European Union (EU) and comprises a set of laws and regulations that designate the operation of the farm sector (crop and livestock) (Andrei and Darvasi, 2012). Its primary objectives are to provide consumers with stable, safe and affordable prices, while ensuring a decent standard of living for farmers (European Commission, 2016). The CAP is one of the oldest policies of the EU covering both the managerial, productive, environmental and social activities of the agricultural sector and, on the other hand, all its links with other sectors of the economy (Jurkenaite and Volkov, 2011).

In European agriculture, the role of the family business

*Corresponding author. E-mail: geortheo@teilar.gr. Tel: +302410684465, +306974584457.

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in the agricultural sector is decisive concerning both employment and its significant contribution to the protection of society (De Castro et al., 2014). In the international literature, several studies have explored the relationship between CAP subsidies and employment in the rural area despite the diversification of results in each EU country (Galluzzo, 2017). The CAP can hardly cope with the challenges it faces because of the contradictions between the pre-defined problems and the measures proposed to deal with them. This is because it offers limited changes to the previous CAP (Popp and Jámbor, 2015). The vague and different directions of the Treaty of Rome which are being pursued in the Treaty of Lisbon create difficulties in the implementation of the agricultural policy. This is a typical component of the structure Tinbergen (Hill, 2012).

The policy context regulates how the farm sector operates at all stages of production and marketing. It also describes the movement of goods, the use of soil, the determination of subsidies, the product quality and the environment, ensuring price stability and employment in the agricultural sector, and offering the European quality products and continuous economic and social development. The main disadvantage of the CAP is that to implement all laws and regulations, it involves extensive paperwork and bureaucracy. For these reasons, the CAP was the subject of significant disagreements between the EU Member States that have led and will lead in a continuous evolution, necessary for the adjustment and the agricultural sector as other sectors of the economy.

Still, the absence of coordination between sectors and between member states resulted in merely pathogenic implemented policies. Over the last fifty years, the various policy schemes within the CAP created a food system of increased productivity per surface of the land, supply of large volumes of food, ultimately ensuring food provision to all. Apparently, farmers were supported to provide cheap raw materials for the food processing industry, whereas the consumer was satisfied by the plethora of food products in the supermarkets. A policy that was efficient, proving economies of scale and low-cost food at large quantity was acceptable at that time. Nowadays, the CAP moves to new directions, and the current discussions on its reform may offer the platform for a sustainable and rational food production system.

The EU financial perspectives for the period 2015 - 2020 are: a) the reduction in the agriculture market share in the EU budget b) make the CAP greener at a price of 30% for environmental reasons, and c) the progressive convergence of the funds of the EU Member States up to90% of the average European Instrument. The primary question for the present research is if the Greek farmers are well informed regarding the new CAP for the period 2015 – 2020.

It is a fact that the reform of the agricultural policy aimed to maintain the income of farm households.

According to El Benni and Finger (2013), these goals could be achieved through different policy measures that include the market support and direct farm payments. Moreover, they claimed that the inequality between individuals is of highest societal and political importance. Alexiadis et al. (2013) underlined the importance of agriculture as one of the most crucial for regional convergence and development. Furthermore, Zasada and Piorr (2015) argued that during the funding periods of 2000 – 2006 and 2007 - 2013, within the EU, there was an effort of improving the competitiveness of the primary sector and protecting the environment and the countryside. That was the case where the third axis of Pillar II of the CAP was introduced and had as a principal aim to sustain and enhance the quality of life in the rural areas.

Still, according to Kotakou and Katranidis (2008), ‘the decoupling of CAP payments leads production decisions and allocation of resources to be dependent on the market prices. Also, many agricultural economists have addressed the effect of the CAP on the various changes in the use of productive factors. Even Bartolini and Viaggi (2011) argued that scholars have underlined the effect of the agricultural policy components such as the decoupled payments. The same opinion was shared by Schmid et al. (2007) who mentioned that ‘prices have been further reduced, and farmers will receive decoupled income support payments instead of production premiums from 2005 onwards'. Despite the changes in the CAP and the significance of the funds spent, the degree of tackling the problem of "farm income" remains unclear (Ackrill, 2008). The new CAP budget is significantly reduced as a percentage of the EU budget but remains the most critical funding policy. In the 2014 - 2020 period the CAP received 37.6% of the EU budget, compared with 43.5% for the 2007 -2013 period. This was a significant reduction compared to previous decades when the CAP accounted for 60% of the budget in the 1990s and 70% in the 1970s (Papadopoulos, 2015).

Based on those mentioned above, the objective of the present study is to investigate and access the perceptions and views of farmers, from a Greek rural region, towards the different aspects of the new CAP. Accordingly, it will be feasible to highlight the problems of the Greek agriculture and to identify the level of information that the farmers have regarding the Common Agricultural Policy (CAP). The remainder of the paper includes a general overview of the new CAP and its implementation to the Greek agriculture, followed by a description of the materials and methods employed in the study. Results are thereafter presented, discussed and the study concluded.

Is the new CAP an opportunity for Greece?

According to a neoliberal opinion, the modern economy

should unify and deliberate on the markets and this may result in the effectiveness of the agricultural product markets and the creation of added value for these commodities. Like in the business world, those agricultural units that will not adapt to the modern international market will be automatically excluded. Moreover, in the last years a sharp decline in the living standards can be observed, with increased poverty, hunger, displacement – migration of population to various countries that ensure safety and a low minimum standard of living. The increase in production costs and the launch of taxes during the crisis led to a severe fall in agricultural income in our country. Over the period 2009 - 2013, the rise in the cost of inputs to agricultural production has increased by more than 10.5%. Characteristic was the change in energy costs, which grew by 44.2% in the 2009 - 2013 period of five years. In the same five years, taxes on production went up from EUR 141.7 million to EUR 441.9 million, an increase of around 211%; a change corresponding to a cost of some EUR 300 million. On the other hand, the financial sector gets stronger, often through state protection policies (too-big-to-fail[1]), increasing speculation on raw materials, metals, food, rural depopulation in the name of productivity, technology, markets, production costs, and reforms.

Agricultural policy and rural development should be designed concerning the protection of the environment, that is to say, nature and the place where man is active. This broadens the orientations and actions of agricultural policy from the agricultural sector to a holistic rural management policy (Vlahos and Louloudis, 2011). The central area of environmental investment for investment projects in agriculture was irrigation, but this was just 2% of all investment plans for the country as a whole (Vorloou and Castritsi-Catharios, 2012). In all European countries, there was a steady migration from the countryside to the urban area, which aggravated the general living conditions of the population in rural areas (Kasimis et al., 2010). During the economic crisis, there was a significant return from urban areas to rural areas. "Rural return" is defined as the internal migration process of the urban population that decides to move to the countryside - since no formal element exists to facilitate research or research on the actual return to the place of origin (Anastasiou and Duquenne, 2015).

Such rural policies aim to drive farmers to private insurance (further strengthening of the financial sector), and on minimal support from national, international institutions (such as EU). The following diagram of the OECD shows the evolution of the assistance of the agricultural sector in EU-28 and the OECD countries (Figure 1). In the last years, the agricultural sector has faced changes and challenges of the public policies (CAP) in both the traditional role and new role. Traditional role concerns food production, raw materials, and job creation, and new role regarding environmental protection, production of quality products, development of rural areas, social cohesion and entrepreneurial form of organization (Karanikolas and Martinos, 2012).

The needs and claims in the modern agricultural production and marketing of agricultural products (input costs, intensification of production, etc.), from an economic and organizational point of view (use of new technologies, global market of agricultural products, etc.), with the constant changes in community policies and with reduction of the production protection for the period 2010 – 2014 (Figure 2) create an enormous uncertainty amongst the farmers.

Adding the climate change, the mentality of the farmers, the global economic crisis that has a significant influence in the agricultural sector and the speculation of the large multinational companies in the food sector (e.g. rice, corn, etc.), we may have a complete picture of the agricultural sector without the economic incentives, especially for small-scale farmers. Agricultural products market instead of becoming self-regulate, deregulated, and the control of markets operating mechanisms also turned off, so we were led to speculation (Dumenil and Levy, 2005). This is the agricultural sector operating environment and is part of the neoliberal view which considers the farmer as the entrepreneur who must adapt to the market conditions. Since 1980 there has been a shift in the agricultural sector to the neoliberal model of markets.

The Greek agricultural sector has contributed to the development of the country's economy as one of the significant factors of development, but also, influenced other sectors as well, such as rural areas development, agro-food security, and regulation, etc. The active population of the country engaged in the agricultural sector accounts for 12% of the total population (Table 1). However, Greece contributes only 3.0% of gross value added of the agricultural sector of the EU (Average 2012 - 2014) and is significantly lower than major competitors. The gross value added has continuously decreased between 1995 and 2014. From 2011 to 2014 has been a slight improvement (Figures 3 and 4).

The generated added value to agricultural production in Greece is far behind from its main competitors. Moreover, in the last decade, the farm income in Greece decreased by an average annual rate of 0.4%, against an increase of 1.6% in the rest of the Eurozone countries.

With Greece's entry into the EU in 1981, the country's economic policy was based on the Keynesian theory, which means the extensive redistribution of income to increase the rate of demand and investment. Furthermore, due to the increase of the EU's imported

[1]During the economic crisis of 2008, the US government intervened in the fate of companies such as AIG because such a company was too big to fail and if it did the outcome would be unprecedented and cataclysmic. (http://www.businessdictionary.com).
The too-big-to-fail doctrine, sometimes called T.B.T.F., goes back at least as far as Brandeis' time, when, in 1914, the Treasury stepped in to provide financial aid to New York City. (Eeic DASH JUNE 20, 2009 If It's Too Big to Fail, Is It Too Big to Exist? http://www.nytimes.com/2009/06/21/weekinreview/21dash.html?_r=0)

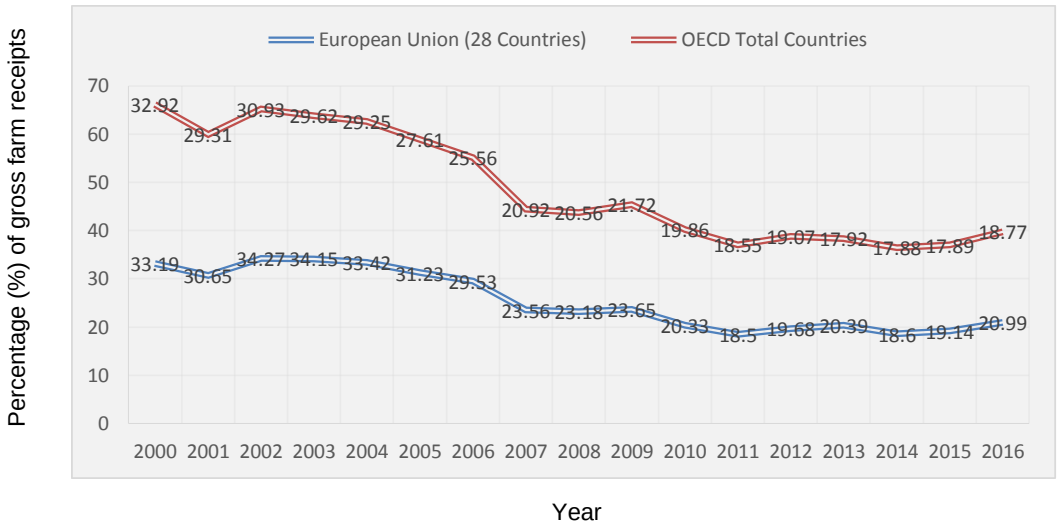

Figure 1. Agricultural support
Source: OECD (2016a).

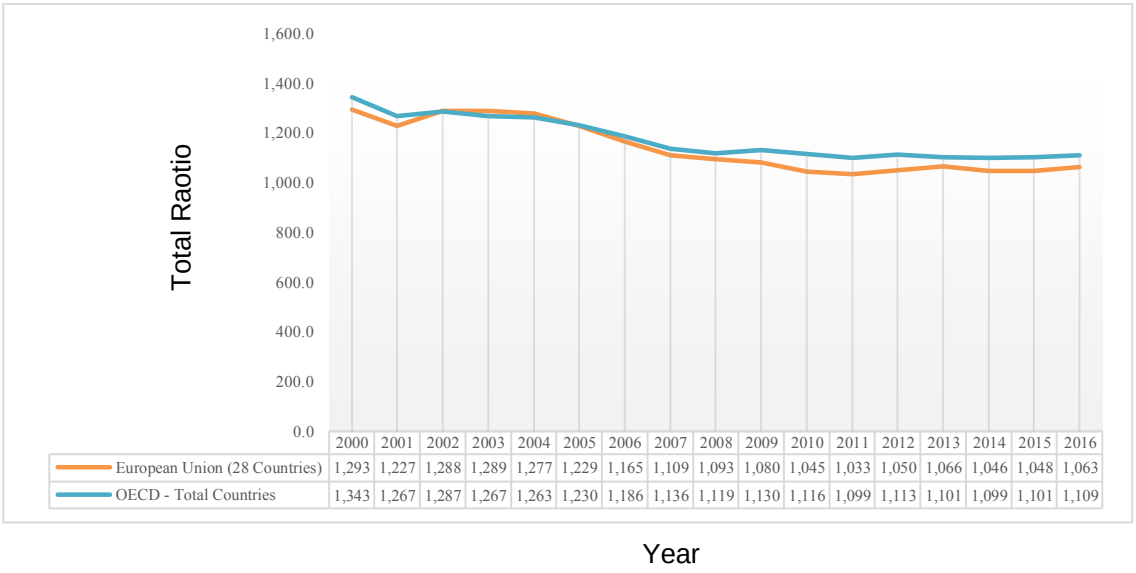

Figure 2. Total Producer protection
Source: OECD (2016b).

products, the agricultural sector external balance became negative. With the CAP of the 80s began the degradation of the agricultural sector. Table 2 illustrates a SWOT analysis for the Greek agriculture:

As reported by Dautopoulos and Pyrovetsi (2002), the Greek agriculture is confused. There is a vision that determines who we are and who we want to reach. Agriculture is drawn from the CAP developments and globalization that neither controls nor defines. Otherwise, the country will make food imports from other countries at better prices and the farmer will be out of the market. In theory, this is correct, but in social terms should we see another agriculture leading to sustainable agriculture as reported by Dautopoulos and Pyrovetsi (2002). The Sustainable Agriculture has the following features:

1. An integrated rural policy.
2. Regional planning.
3. Mediterranean recipes.
4. Local agricultural research.
5. Local control and planning of agricultural education.
6. Tin development of the cooperative movement of the

Table 1. Main characteristics of the agricultural sector in Greece.

Characteristic	2007	2008	2009	2010	2011	2012
Employment in the Primary Sector **(%)**	11.1	10.9	11.2	11.7	12.3	13
Crop Production value (mil.**€)**	7385.21	7008.93	6495.85	6738.69	7081.75	7012.86
Animal Production Value (mil.**€)**	2675.77	2776.78	2800.17	2781.88	2833.79	2767.16
Total production of the Agricultural Sector (million**. €)**	10896.37	10728.77	10251.77	10519.7	10926.31	10781.52

Source: Eurostat, Hellenic Statistical Authority (2015).

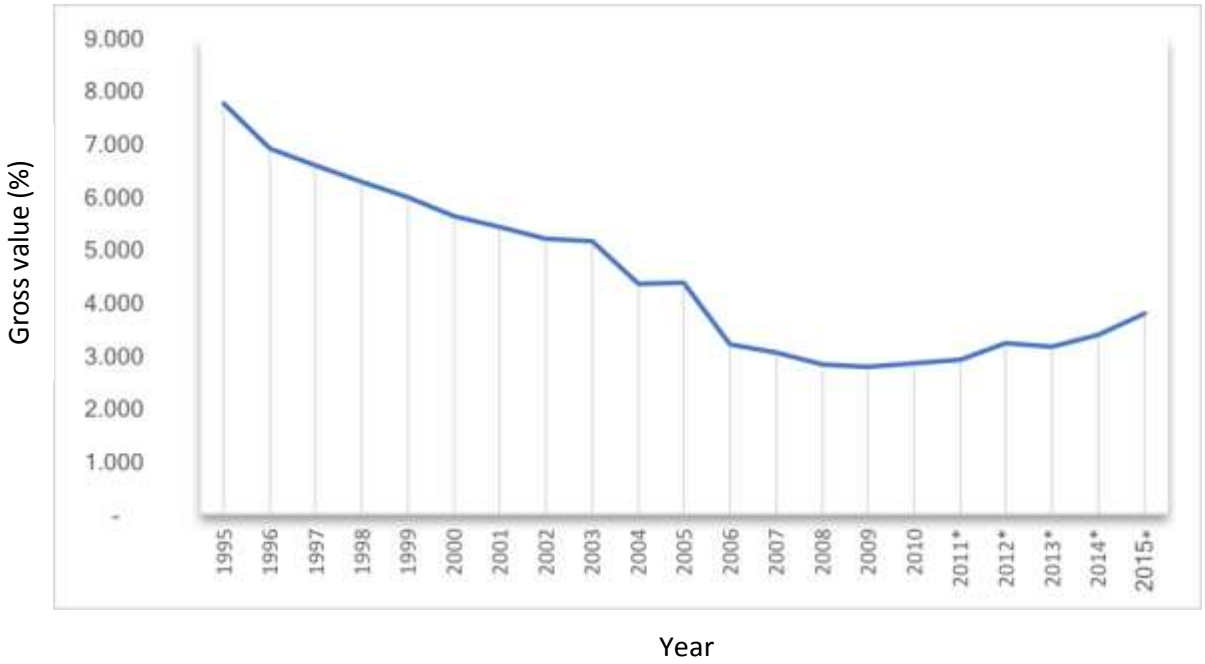

Figure 3. Gross value in agricultural and livestock production and other activities.
Source: Hellenic Statistical Authority (2015).

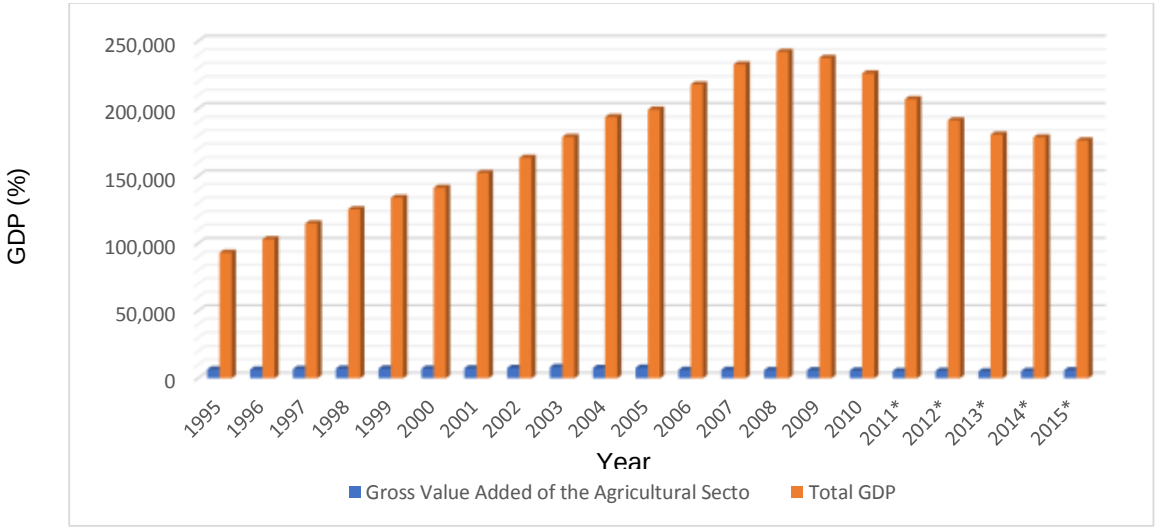

Figure 4. Partition of agricultural sector on GDP (%) Gross Value Added (million Euros).
Source: Eurostat, Hellenic Statistical Authority (2015).

Table 2. SWOT analysis for the Greek Agriculture.

Strength	Weakness
Excellent climatic and soil conditions, low pollution, high quality, ease and low cost of conversion of large areas or livestock to organic, etc.	Serious structural problems (small size and multiplicity of farms, aging, low educational level, lack of entrepreneurship and innovative spirit).
Great international recognition of products and regions in the country. Very high production differentiation and global uniqueness for some products.	High cost of production, high dependence on subsidies. Objective difficulties in creating comparative price advantages.
An important position of the agri-food sector in the country's economy and the existence of significant production capacity in processing. Powerful Brand Names of Big Companies	Insufficiencies of the structures, processing, promotion and distribution of agricultural products abroad. Lack of cooperative consciousness.
The negative structural features of Greek production (mountainous or semi-mountainous lands, island regions, small farms, etc.) can be turned into comparative advantages.	Problems of interconnection between agriculture, processing and marketing. Insufficient agricultural research. Lack of domestic production of inputs required. Low production size at local level that prevents the vertical integration or transportation of products in large urban centers.

Opportunity	Threat
High global demand for quality agricultural products. Favorable conditions in mature but also emerging markets for increased exports of Greek products.	Deterioration of the financial crisis. Reduced per capita consumption and shift to cheap imported due to reduced disposable income.
Creating favorable conditions for the modernization, development and resolution of structural problems following the revision of the CAP. Emphasis on the EU's agricultural policy sustainable development and raising awareness of the environment and food safety	Increase competition in the long term, from low-cost third countries.
Sufficiency of agricultural resources and the existence of unused land. Significant margins to increase productivity and improve quality. Variety of natural and cultural environments and excellent environmental conditions favoring the development of agrotourism.	Market liberalization and the failure of certain branches of Greek agriculture to respond to the challenges. Low productivity and lack of international competitiveness of basic export products, following the revision of the CAP
Possibilities of exploiting agriculture (in times of severe economic crisis), to combat unemployment.	State mechanism inefficiency, service malfunctions and infrastructure problems.
Existence of intense interest in serious business activity in the industry. Ability to exploit new technologies to create effective marketing networks.	Difficulties in expanding and modernizing many viable farms and failing to achieve economies of scale.

Source: Dagalidis (2014).

base.

7. Farmers equity-creative.

Nowadays, the farmer operates on a business basis as the work has three dimensions: economic, social and environmental. Therefore, today's farmer should have the ability to understand the evolution of the economy. The agricultural production of the country will be turned into products that meet the international market. This means that agricultural products are competing independently of the producing country

and the country of destination. A competitive economy means having the capacity to produce goods and services at lower cost and in excellent quality. In this case, the economy is attractive for investment, thus increasing productivity. So, the competitiveness and investments are directly linked (Jayasuriya, 2011; Milner and Pentecost, 1996; Walsh and Yu, 2010). So, the economy will show increased growth because competitive considered that the economy is showing increased growth by continuously improving productivity.

Defining competitiveness as "the ability of a country or a company to proportionally generate more wealth than its competitors in world markets," the question for policymakers is whether such studies are relevant in comparing economic performance across countries (Kliesen, 1995). The actual competitiveness is measured by productivity (Porter et al., 2005). The main questions are: How can the competitiveness of the monetarist-liberal view be increased when the average farmer in Greece has a low income and high production costs; when the farmer - entrepreneur relationship is not competitive because the majority of farms are family-related? What is the bargaining power of farmers in the formation of prices following the benefit-cost view when the trend of prices of agricultural products varies widely from year to year and for most products is determined by international food exchanges and speculators (Kourmousis, 2010). The abundant quantities and slow economic growth have pushed food prices to significant fluctuations. The variation of the quotation has often a dramatic impact on the economy.

Unfortunately, the variables that determine the competition is not only the price and quality of products but also other variables such as the size of production units, the cost of production, bargaining power, tax, and insurance system, infrastructure, justice, public administration, etc. Therefore, the market conditions are determined exogenously by large multinational manufacturing agricultural industries and retail food chains rather than farmers. A Greek farmer is limited to the production of products, receiving little of the goodwill of the final products, but not regarded as a producer of food necessary for the survival and good health of people but as a business based on competitiveness. This view may have a negative impact on consumer both from the health and economic perspectives.

MATERIALS AND METHODS

The survey was based on primary data gathered using a questionnaire filled in by telephone interviews. The study was conducted in November 2016, within the geographical boundaries of the Region of Thessaly. The telephone survey using a structured questionnaire was conducted on a sample of 241 farmers in the region aged over 18 years. The sample was selected using the multistage sampling method (Oppenheim, 1992; Stathopoulos, 1997), whereas the total population of the research area along with the social and economic data were provided from the 2011 National Statistical Office of Greece (NSSG, 2011). The sample design involved, firstly, the proportional representation of the people (family leaders) working as agricultural producers in the four provinces of Thessaly (Magnesia, Larissa, Karditsa and Trikala) and secondly, the proportional representation of rural regions per county so that the results of the survey can be as general as possible for the entire population of the research area.

The study sample comprised farmers who responded to the phone calls randomly assigned to telephone devices in the research area and were considered suitable persons to participate in the survey. Thus, there was the possibility that some of them did not live permanently in the region but have been found at random or for some limited time. However, this possibility was not high and do not alter the results of the survey, nor does it represent an obstacle to generalizing conclusions for the whole population.

Accordingly, based on the sampling organization, it can be assumed that the total sample of the 241 farmers in the region corresponded to a population with similar characteristics, where its size varied within the range required by the application of multistage sampling (Stathopoulos, 1997).

The questionnaire was tested on a sample of fifty people to identify possible weaknesses and to investigate the necessary improvements in its structure. The questions included in the survey instrument were based on extensive literature review, after the significant changes were made to respond to the specific purposes of the study (Babbie, 2011; Oppenheim, 1992; Dautopoulos, 2000; Javeau, 1996). The questionnaire included a total of 46 closed-type questions divided into three categories: the socio-demographic characteristics of farmers, the structural features, and problems of farms and the farmer's views on the new CAP (views, components). The data were analysed using SPSS 17.0 and employing a series of statistical analyses, namely the descriptive statistics, statistical hypothesis tests (X^2), non-parametric statistical analysis of the Friedman, Factor Analysis and Cluster Analysis.

Factor analysis was performed using the principal component analysis (PCA) method with the axes rotating by the Varimax method. Accordingly, the technique was employed to the questions that referred to the farmer's responses regarding the most significant factor of the new CAP and the most significant changes that the new CAP brought about. The former questions were measured with four items on a 5-point Likert scale (1-not at all important to 5-very important), whereas the latter was gauged with four items measured with the same scale. Subsequently, the factors revealed from the analysis were used to perform a cluster analysis.

Cluster analysis is a method designed to classify existing observations using the information that exists in some variables. It can be argued that by looking at how similar some observations about a number of variables are, the method tends to create groups of similarity-like observations. A successful analysis should result in groups for which the observations within each group are as homogeneous as possible, but observations of different groups differ as much as possible (Hair et al., 2010). Cluster analysis can be conducted through a) by hierarchical clustering, and b) by the K-Mean cluster analysis.

In the present study, a combination of the two methods was employed. Initially, a hierarchical cluster analysis was used to identify the number of clusters. Subsequently, the non-hierarchical cluster analysis was applied to determine these in detail, utilizing the findings of the hierarchical analysis. The hierarchical clustering method was performed using the Ward method to minimize cluster differences. Applied distance measure was the square of the Euclidean distance. Regarding the choice of the number of clusters to be created, the number of farmers in the sample was the basis for selecting a range of two to five clusters. The number of clusters resulted from the assessment of the agglomeration coefficients as well as from the fact that the number of farmers in each cluster was theoretically valid and practical. The researcher is looking for significant increases in agglomeration coefficients to determine the

number of clusters to be created. Finally, based on the specific data, size of the sample and its theoretical interpretation, analysis of the three clusters in the second stage of the analysis (non-hierarchical) was examined to analyse the results. Consequently, the non-hierarchical analysis was applied to K averages to determine in detail the final number of clusters derived from the hierarchical analysis. The center of each cluster is merely the average of all variables and for those observations that fit into that cluster (Hair et al., 2010).

RESULTS AND DISCUSSION

The investigation of the probability of a statistical difference between farmers' views on the most important changes brought about by the 2003 CAP was gauged through application of the Friedman's statistical test (Table 3). According to the results, it was found that the decoupling of subsidies was the main change of the CAP according to the farmers' views, with a 2.95 average ranking; also, the next most significant change is in the relationship with the ginning plants, with a rating of 2.79.

The Friedman's statistical test was also applied to investigate the possibility of a statistical difference between farmers' views for the most important CAP factors of 2003 (Table 4). The results indicate that increase in competition is the most important factor, with a rating of 3.09, followed by the agro-environmental measures, with an average value of 2.84.

Besides, the Friedman's statistical test has employed the existence of a statistical difference between farmers' views on which farming method or tactic would change in the years to come. According to the results (Table 5), farmers are more likely to make changes in farm buildings and other infrastructures, with an average of 5.67, with other changes including the irrigated area (5.55) and the private area (5.51).

Respondents were also asked how they perceive the changes of the new CAP for the future of farmers, through a question where they had to choose between the answers 1 = Threat, 2 = Opportunity, 3 = Neutral, 4 = I do not know. Accordingly, the results showed that most farmers do not know (33%) or consider neutral (31%) the changes in the 2003 CAP for the future of farmers, followed by 25% of the sample that discusses the changes as an opportunity, and 11% considers them as a threat. Farmers were also asked to indicate the perceived changes in the 2003 CAP for the employment in the agricultural sector, choosing between the answers: 1 = Threat, 2 = Opportunity, 3 = Neutral, 4 = I do not know.

The results indicated that the farmers do not know (29%) or consider the changes in the 2003 CAP for the employment in the agricultural sector as neutral (30%) or opportunity (28%), while only 11% considered the changes as actual threats. Finally, the sampling farmers were asked their views regarding the situation for the farmer and agriculture after 2015, choosing between 1 = Better, 2 = Worst, 3 = Do not Know. The majority of respondents do not know what the state of agriculture and farmers will be after 2015, while 25% perceived that it would be an opportunity and 21% of the sample are of the opinion that it will be a threat.

Table 3. Most important changes brought about by the 2003 CAP, Friedman test results.

Changes in the CAP reform	Mean rank
Decoupling of subsidies	2.95
Comply with environmental restrictions	2.34
Changes in the role of cooperatives	1.92
Relations with ginning plants	2.79

Table 4. Most important factors of the 2003 CAP reform, Friedman test results.

Factors of the CAP reform	Mean rank
Reduction in subsidies	1.30
Agri-environmental measures	2.84
Increase in competition	3.09
Decoupling of payments	2.77

The next step of the methodology involved the factor analysis. Table 6 illustrates the results of the analysis, where two factors were revealed explaining 63.3% of the total variance.

The first factor can be named “Organizational changes” as it includes the changes in the role of cooperatives and the compliance with environmental constraints. The second factor can be named “Decoupling” since it comprised the decoupling scheme of the CAP and the changes in the relations with the ginning plants. As regards the most significant components of the new CAP, the factor analysis revealed two factors that explained 69.59% of the total variance. The first factor (Table 6) can be named “Farm competition” since it contained the items of and the increase in competition and the agri-environmental measures. The second factor comprised the items of ‘decoupling’ and ‘decrease in subsidies’ and can be named “Subsidies.” The revealed factors were further used for cluster analysis to identify possible groups of farmers. Variables that were also included in this grouping procedure involved the farmer’s perceptions regarding the changes in the new CAP, their attitudes regarding how agriculture and farmers will be after 2015, their satisfaction from sale prices, the problems they confront regarding sales and the level of information concerning the new CAP. The 3-cluster solution was interpreted easier and displayed the highest number of significant factor differences among the clusters (Table 7). The three formed clusters (cluster 1, n= 80; cluster 2, n=61; cluster 3, n=100) are evidently separate regarding the perceptions of farmers regarding the new CAP.

Table 5. Changes in farming methods or tactics, Friedman test results.

Farming method	Mean rank
Investment in machinery	4.56
Machine use contract and machine sharing	4.73
Investing in agricultural buildings and other infrastructure (roads, water, electricity, drainage, watering, fences, etc.)	5.67
Irrigated area	5.55
Owned land	5.51
Rented area	5.41
Use of fertilizers	4.34
Use of agrochemicals	4.16
Use of quality seeds	5.09

Table 6. Factor analysis results.

Component	Factors	
Significant changes of the new CAP	**1**	**2**
Organizational changes		
Changes in the role of cooperatives	0.834	
Compliance with environmental constraints	0.779	
Decoupling		
Relations with the ginning plants		0.683
Decoupling		0.776
Most significant components of the new CAP	**Factors**	
Farm Competition		
Increase in competition	0.896	
Agri-environmental measures	0.862	
Subsidies		
Decoupling		0.833
Decrease in subsidies		0.669

Table 7. K-Means cluster analysis results (three-cluster solution) (mean values).

Component	Cluster			F ratio	Sig.
	1 (N=80)	2 (N=61)	3 (N=100)		
Organizational Changes	1.0734	1.9397	1.5100	40.187	0.000
Decoupling	2.9543	2.4678	2.1380	34.506	0.000
Farm competition	2.0781	2.8303	2.3389	4.761	0.009
Subsidies	2.8734	2.3876	2.0980	37.414	0.000
Perceptions regarding the changes in the new CAP	2.1758	1.4456	1.9734	47.012	0.000
Perceptions regarding how agriculture and the farmers will be after 2015.	1.7210	2.8620	2.2105	1.612	0.202
Satisfaction from sale prices	1.1750	2.4727	1.4145	27.547	0.000
Problems regarding sales of products	2.1875	2.9962	1.4812	15.262	0.000
Information regarding the new CAP	2.8461	2.0896	1.4989	21.001	0.000

Next is a description of the cluster profiles of the farmers.

Cluster 1

The first cluster includes 80 farmers that represent 33.1% of the total sample. The farmers in this cluster do not perceive that the new CAP had any organizational changes but believe that the decoupling of payments was the most significant amendment. As regards the most vital elements of the new CAP, the farmers in this cluster

Table 8. SWOT analysis of the farmers' answers.

Strengths	**Weaknesses**
i) Investing in agricultural buildings and other infrastructure, with other changes including the irrigate area. ii) 25% of the sample that discusses the changes of the new CAP as an opportunity iii) The new CAP moved to significant organizational changes	i) The farmers are medium informed regarding the measures included in the new CAP. Most farmers do not know (33%) or consider neutral (31%) the changes of the new CAP. ii) The majority of respondents do not know what the state of agriculture and farmers will be after 2015. iii) The farmers do not face particular problems as concerns product sales, and they are satisfied with prices
Opportunities	**Threats**
i) Comply with environmental restrictions ii) The view of farmers regarding the subsidies and decoupling as components of the new CAP is mediocre, iii) The farmers do not see farm competition as an essential element stemming from the policy measures.	i) Increase in competition ii) Changes in farming methods iii) The farmers do confront significant problems in selling their products, besides the fact that they are moderately satisfied with product prices..

think that the issues referring to subsidies are the most significant and the farm competition stemmed from the applied policy schemes. Besides, they have a favourable view concerning the changes in the new CAP and are well informed for the implemented measures. Still, they are not at all satisfied with their product's prices and confront mediocre problems in selling their products. Based on the above characteristics, the farmers in this cluster may be named as "active-informed farmers."

Cluster 2

This cluster involves 61 farmers that represent 25.3% of the total sample. Farmers in this cluster perceive that the new CAP moved to significant organizational changes, but overall, they do not think that many changes occurred with the new policy scheme. Moreover, their view regarding the subsidies and decoupling as components of the new CAP is mediocre, and they do not see farm competition as an essential element stemming from the policy measures. They do not face particular problems as it concerns product sales, and are satisfied with prices. Still, they are medium informed regarding the measures included in the new CAP. Accordingly, the farmers in this second cluster may be named "impartial farmers."

Cluster 3

One hundred farmers belong to this cluster capturing the majority (41.6%) of the sample. Farmers in this group do not believe that significant changes occurred regarding either organizational ones or financial (decoupling-subsidies). Their perception concerning the changes that the new CAP brought about is mediocre considering that they are not at all well informed about the policy schemes implemented. Finally, they do confront significant problems in selling their products, besides the fact that they are moderately satisfied with product prices. Consequently, the farmers that belong to this third cluster can be named "passive-misinformed farmers."

Bearing in mind the above-mentioned results of the study, a SWOT analysis was employed based on the answers provided by the farmers in the sample (Table 8). The major threats for farmers are the existence of competition, their dissatisfaction with the prices of products and the difficulties they have in selling the products. These are considered as competition threats. We think that competition comes mainly from countries with low labor costs.

Although Solomou et al. (2008) argued that informing Greek farmers about the CAP and its reforms is inadequate concerning good practice, mainly due to the lack of information and the low educational level, the present study found that farmers are well informed about the long-term growth potential of the CAP.

Conclusion

The objective of the present study was to investigate farmers' perceptions and view regarding different aspects of the new CAP. The

results of the study focus mainly on the socio-demographic characteristics of the respondents and their views regarding the issues that emerged after the 2013 CAP reform. Also, farmers are more likely to make changes in farm buildings and others about the decoupling of payments and the relations with the ginning plants, whereas the respondents perceived as most important factors the increase in competition and the agri-environmental infrastructures, the irrigated land, and the owned land. Finally, they were not aware of the changes to the new CAP for the future of farmers, employment in the agricultural sector, and the situation for agriculture and the farmer after 2015. To increase farm incomes, it is recommended that farmers be continuously informed on product prices and the financial requirements of each crop.

The Greek agricultural sector should turn to sustainable agriculture. Moreover, according to Goulas (2017), in the last years European Union rural policies are focused on a balanced rural development and especially those policies are focused on less favoured agricultural areas. It should focus on the quality of agricultural products and not just on quantity. Farmers should make use of new technologies, invest in the production process to reduce production costs, reduce their dependence on water, eliminate the use of chemicals in greenhouses, and reduce antibiotics in livestock farming. While they will have to redefine their role in the Greek economy and society and work cooperatively, possibly in the form of cooperatives, it is believed that the country will be competitive in international markets with direct consequences on investment in the agricultural, agro-industrial, education and employment sectors. There are three issues that will contribute overall to the country's economic growth.

One of the disadvantages that characterize the Greek agriculture is the distorted structure of ages, with the highest percentage of farmers being over 55 years old. They do not have the reflexes demanded by the new competitive environment; hence they cannot make significant upheavals, but only improvements in the quality direction, as long as they are rewarded accordingly. A necessary prerequisite for their viability is therefore, the consolidation of the market by concerted practices and the reduction of production costs, which, at least regarding agricultural supplies, is a multiple of the European average. Nonetheless, the aging rural population - despite the concerns it creates - could hide at the same time the potential for improving the structure of the Greek agriculture in the medium term if it was combined with an entry program for young farmers in the profession. However, the rate of exit is much higher than the rate of entry, and this is due to the fact that despite the high youth unemployment, the farmer's profession is not attractive but mostly discouraged. There are, of course, new farmers with an essential requirement for a secure business environment. Parameters that define it includes: the use of financial instruments with a development dimension, information, education, training, research, innovation. Mostly, however, they demand quality of life in the countryside, education, health and culture.

Within the new CAP context, farm support has been tailored to the priorities and concerns of consumers. Having left behind when subsidies were linked to the quantity of production, support for the CAP has now turned to the achievement of objectives on quality, the natural environment, and food safety, in line with the priorities of European citizens. Greek farmers have once again the freedom to produce according to market demand. By removing the incentives for overproduction, the reforms have made the CAP less distortive in international trade and consider the needs of developing countries. Most importantly, farmers must be aware of the business dimension of their profession. The continuous and stable quality must be a necessary thing to do, along with improving products and services. Local quality standards, combined with networks of similar businesses, can act as excellent means of displaying attractive products and services, tempting investors and managing visitors.

Future research will try to investigate the impact on the new CAP and its application on local products and farmers willing to invest on that form of agriculture.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Ackrill R (2008). The CAP and its Reform – Half a Century of Change? EuroChoices 7(2):13-21.

Alexiadis S, Ladias C, Hasanagas N (2013). A regional perspective of the Common Agricultural Policy. Land Use Policy 30(1):665-669.

Anastasiou E, Duquenne MN (2015). Return to the Rural in Greece during the last decade: a methodological approach of the potential spatial patterns. International Conference on the Population of the Balkans at the Dawn of the 21st Century, Ohrid, 21-24 October 2015.

Andrei JV, Darvasi D (2012). Perspectives and challenges in financing the new common agricultural policy, a new paradigm. Food Agric. Environ. 10(1):904-907.

Babbie E (2011). Introduction to Social Research-5th Edition. Wadsworth, Cengage. Learning. ISBN 978-960-218-750-0.

Bartolini F, Viaggi D (2013). The common agricultural policy and the determinants of changes in EU farm size. Land Use Policy 31:126-135.

Benni NEl, Finger R (2013). Gross revenue risk in Swiss dairy farming. J. Dairy Sci. 96(2):936-948.

Dagalidis A (2014). Specialization and Competitiveness of Greek Agriculture 1961-2011, Sector Study, Piraeus Bank. Greece.

Dash E (2009). If It's Too Big to Fail, Is It Too Big to Exist? http://www.nytimes.com/2009/06/21/weekinreview/21dash.html

Dautopoulos G (2000). Methodology of Social Research. Zygos Publishing, 3rd Edition, Thessaloniki. (in Greek)

Dautopoulos G, Pyrovetsi M (2002). Sustainable Agriculture: The vision of the Greek Agriculture. Georgia – Ktinotrofia 1:52-60.

De Castro P, Adinolfi F, Capitanio F (2014). Family farming issues and challenges in the reformed common agricultural policy. Econ. Agrar.

Recur. Nat. 14(1):169-176.
Dumenil G, Levy D (2005). Costs and Benefits of Neoliberalism. In Epstein, Gerald (ed.), Financialization and the World Economy. Cheltenham and Northampton: Edward Elgar. 2004. Capital Resurgent: Roots of the Neoliberal Revolution. Cambridge and London: Harvard University Press.
European Commission (2016). Agriculture and rural development. The CAP in your country https://ec.europa.eu/agriculture/sites/agriculture/files/cap-in-your-country/pdf/el_en.pdf
Eurostat (2012). Statistics Explained Archive - European Commission - Europa EU — General and economic statistics December 2012. Luxembourg: Publications Office of the European Union, 2013, ISSN 1977-3951 Cat. No KS-FM-13-002-EN-N.
Galluzzo N (2017). The Common Agricultural Policy and employment opportunities in Romanian rural areas: The role of Agritourism. Bulg. J. Agric. Sci. 23(1):14-21.
Goulas A (2017). Local products as a tool of development for the local economies, Actahortic 2017.1175.1, October 2017. DOI: 10.17660/Acta Hortic.2017.1175.1
Hair JF, Black WC, Babin BJ, Anderson RE (2010). Multivariate data analysis: A global perspective (7th ed). New Jersey, Pearson Prentice Hall.
Hellenic Statistical Authority (2015). Hellenic Statistical system. http://www.statistics.gr/en/home
Hill B (2012). Understanding the Common Agricultural Policy. Earthscan, London and New York 335p.
Javeau C (1996). The Questionnaire Survey: The Good Researcher's Manual. Editor-in-English: Tzannone-Tzortzis, Publisher: Typothito - G. Dardanos, Athens.
Jayasuriya D (2011). Improvements in the World Bank's Ease of Doing Business Rankings: Do they translate into Greater Foreign Direct Investment inflows? The World Bank, Policy Research Working Paper No 5787.
Jurkenaite N, Volkov A (2011). Challenges of Common Agricultural Policy development [Bendrosios žemės ūkio politikos plėtros problematika]. Business: Theory Practice 12(2):120-130.
Karanikolas P, Martinos N (2012) The Greek Agriculture in the crisis: Problems and Perspectives. Logios Ermis (in Greek). P 2.
Kasimis C, Papadopoulos AG, Pappas C (2010). Gaining from Rural Migrants: Migrant Employment Strategies and Socioeconomic Implications for Rural Labour Markets. Sociol. Ruralis 50(3):258-276
Kliesen KL (1995). The Fixation on International Competitiveness. Federal Reserve Bank of St Louis. The Regional Economist January 1995 https://www.stlouisfed.org/Publications/Regional-Economist/January-1995/The-Fixation-on-International-Competitiveness.
Kotakou C, Katranidis S (2008). Evaluating the Effects of Decoupled Payments under Output and Price Uncertainty The 84th Annual Conference of the Agricultural Economics Society Edinburgh 29th to 31st March 2010, http://ageconsearch.umn.edu/record/91753/files/51Kotakou_katranidis.pdf
Kourmousi M (2015). The war on food stock has began. http://www.aua.gr/gr/synd/eedip/Nea/2008/Trofi_eleyth_08-04-12_Kourmousis_Litsis.pdf (Accessed on 01 February 2016) (Edition 2015)
Milner C, Pentecost E (1996). Locational advantage and US foreign direct investment in UK manufacturing. Appl. Econ. 28(5):605-615.
Organization For Economic Co-operation and Development (OECD) (2016a), Agricultural support (indicator). (Accessed on 01 February 2016) (Edition 2015). doi: 10.1787/6ea85c58.
Organization For Economic Co-operation and Development (OECD) (2016b), Producer protection (indicator). doi: 10.1787/f99067c0-en (Accessed on 02 February 2016).
Oppenheim A (1992). Questionnaire Design, Interviewing and Attitude Measurement. Printer, London and Washington.
Papadopoulos AG (2015). The Impact of the CAP on Agriculture and Rural Areas of EU Member States' Agrarian South: J. Polit. Econ. 4(1):22-53.
Popp J, Jámbor A (2015). How consistent is the new common agricultural policy with the challenges it faces? Soc. Econ. 37(2):225-243.
Porter ME, Schwab K, Lopez-Claros A (2005). The Global Competitiveness Report 2005–06: Policies Underpinning Rising Prosperity, Palgrave Macmillan: New York.
Schmid E, Sinabell F, Hofreither MF (2007). Phasing out of environmentally harmful subsidies: Consequences of the 2003 CAP reform. Ecol. Econ. 60:596-604.
Solomou A, Tsogia S, Mousxoudi K, Fragia T, Sfougaris A, Tzortzios S (2009). Farmers' views and attitudes towards the reformed common agricultural policy in Greece. Int. J. Sustain. Dev. Plan. 4(3):265-276.
Stathopoulos B (1997). Market Research Methods. A. Stamoulis, Athens. Bohrnstedt, G. W. (1977). Reliability and Validity Assessment in Attitude Measurement" in Gene F. Summers (eds.), Attitude Measurement. Kershaw Publishing Company Ltd, London.
Vlahos G, Louloudis L (2011). Landscape and agriculture under the reformed Common Agricultural Policy in Greece: Constructing a typology of interventions. Geografisk Tidsskrift 111(2):131-147.
Vorloou AA, Castritsi-Catharios J (2012). The common agricultural policy's effects on the agricultural sector in Greece and its environmental impacts. Greece: Econ. Polit. Soc. Iss. pp. 163-174. https://www.scopus.com/inward/record.uri?eid=2-s2.0-84895305017&partnerID=40&md5=92d44fdde8dc6054a945d380321b5a62
Walsh JP, Yu J (2010). Determinants of Foreign Direct Investment: A Sectoral and Institutional Approach. IMF working paper. WP/10/187.
Zasada I, Piorr A (2015). The role of local framework conditions for the adoption of rural development policy: An example of diversification, tourism development and village renewal in Brandenburg German. Ecol. Indic. 59:82-93.