The impact of European Agri-environmental Policy on Organic Citrus Growing: A case study of Calabria (Italy), and the Comunidad Valenciana (Spain)

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Summary

The objective of this paper is to consider the adoption of the growing of citrus crop through organic agriculture within the European Union's agri-environmental policy framework. This study addresses two regions that form part of two different European Union (EU) states: Calabria (Italy), and the Comunidad Valenciana (Spain). Citrus cultivation has been selected as the main focus of this paper given the social and economic importance of this sector in both regions.

This study aims to examine how certain decisions, such as the amount of the subsidy that a producer receives or other conditions established within the regional programs, will result in different options even though we set out from the framework of a Common Agricultural Policy (CAP).

1. Introduction.

As we have described in the summary, the objective we want to reach with this paper is to enhance the growing importance of organic farmic within the European Union (Commission des Communautes Europeennes, 1989), mainly as a consequence of the application of the Council Regulation (EEC) no. 2078/92 (European Commission, 1998) and its enclosed subsidy programs. In fact, there has been an evolution of the implementation of organic agriculture during the last ten years, that we can appreciate through different studies (Besson J.M., 1990, Baldock D., Beaufoy G., 1993, Bruckmeier K., Ehlert W., 2002).

This implementation of organic farming has been focused on citrus crop in our case study, so first of all we shall explain the selection of that crop as the central point of the paper while offering an agricultural analysis of both regions. To this end, the following tables (I-II) illustrate the structure of rural property in Calabria and in the Comunidad Valenciana and specify the main crops currently grown there.

Table I. Main crops in surface of calabria and the comunidad valenciana

	Calabria[1]		Comunidad	Valenciana[2]
Crops	**Surface (Ha)**	**% of UAA[4]**	**Surface (Ha)**	**% of UAA[4]**
Olive	166,734	30.0	97,256	11.4
Citrus	*42,282*	*7.6*	*191,085*	*22.4*
Vegetables	16,039	2.9	28,041	3.3
Grapes	14,439	2.6	86,274	10.1
Orchards[3]	8,385	1.5	153,361	18.0
UAA[4]	556,503		852,224	

[1] Data from 1997. [2] Data from 2001. [3] Citrus no included.
[4] **UAA =** Useful Agricultural Area, defined as the area integrated by the total surface of crops, meadows and pastures.

Source: Peris E. (2002).

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The Useful Agricultural Area (UAA) is estimated in Calabria as 36.9% of the regional surface area, while in the Comunidad Valenciana it is 36.7%. As they are both Mediterranean regions, the two regions are cultivated with similar crops: citrus, olive-trees, grapes, fruit orchards and rotating vegetable crops. Calabria's main crop, in terms of surface area, is the olive-tree. Citrus takes third position after durum wheat with a surface area of 7.6% of UAA. On the other hand, in the Comunidad Valenciana, citrus and orchards (persimons, medlars, peach trees, etc.) represent 15% of regional surface area, that is 56.08%[1] of land under cultivation. Citrus cultivation alone is equivalent to 8.2% of the Comunidad Valenciana's regional surface area, equivalent to 22.4% of the UAA. It is clear that citrus growing contributes considerably in economic terms, as it is the basis of the region's agrarian economy.

Table II. Structure of rural property in calabria and in the comunidad valenciana

	Calabria[1]		**Comunidad**	**Valenciana[2]**
	% holdings	**% UAA[4]**	**% holdings**	**% UAA[4]**
S[3]< 2 Ha	74.9	23.3	57.5	12.6
2 Ha < S[3]< 20 Ha	23.3	33.2	39.7	49.5
20 Ha < S[3] < 100 Ha	1.6	19.1	2.5	21.5
S[3]> 100 Ha	0.2	24.4	0.3	16.4

[1] Data from 2000. [2] Data from 1997. [3] **S =** Surface.
[4] **UAA =** Useful Agricultural Area, defined as the area integrated by the total surface of crops, meadows and pastures

Source: Peris E. (2002).

As for table II, which contains data about the structure of rural property in both regions, it is worth noting that 94.6% of Calabrian holdings are family farms. 74.9% of holdings are less than 2 Ha in surface area, 23.3% vary between 2 and 20 Ha, and only 0.2% are larger than 100 Ha. In the Comunidad Valenciana, 39.7% of farms are included in the second group, that is between 2 and 20 Ha. The surface area difference in the 2-20 Ha segment between both regions goes to the first and last groups in Calabria's case (Surface < 2 Ha and Surface > 100 Ha). With this data we can conclude that there are considerable regional similarities, as in both of the regions the most significant UAA surface is included in the 2-20 Ha segment.

Consequently, the two regions are faced with similar problems related to the structure of rural property: a significant percentage of small farms, the dispersion of property (factors that act together against scale economies), the relative lack of medium sized holdings, aging of population and high levels of unemployment in agricultural zones. Furthermore, we should mention other factors that only concern Calabria, such as a difficult geographical situation, structural backwardness, inefficient trade channels, dispersion of supply and a weak industry.

Regarding the size of organic citrus holdings, we can affirm that in Calabria organic citrus farms tend to be medium and large sized (Gaudio F., 2002), while in the Comunidad Valenciana they are small farms, practically all of them classified on the first surface segment (Peris E., 2002). Two are the main reasons to explain this situation: the amount of subsidies paid to organic citrus producers which act as an important incentive in Calabria, as we will see later, and the natural conditions on where citrus crop is grown, more favourable in Calabria than in the Comunidad Valenciana in order to deal with the conditions imposed by Regulation (EEC) 2092/91. This paper is based on a deeper study (Peris E., 2002), where further information related with the agronomic conditions of both regions for organic citrus crop could be found.

[1] **Source:** Ministerio de Agricultura, Pesca y Alimentación (2002). "*Hechos y cifras sobre agricultura 2001 "*. (Data from 1999).

2. European Union subsidies for organic agriculture. Special reference to citrus crop in Calabria and in the Comunidad Valenciana

As with the former agri-environmental programs related to the Regulation of the European Community (EEC) 2078/92 (European Commission, 1998), with the new programs arising from Regulation (EEC) 1257/99 there are specific subsidies aimed at helping farmers who decide to addopt organic agriculture as a production technique for their farms. The exact amount of subsidies is established independently either by each Member State or by each region, but they have to limit their financial expenses to a predetermined amount of money. This budget is distributed in order of the priorities given to the different measures, depending also on the crop to be managed. We may better distinguish these differences if we examine organic citrus cultivation in Calabria and in the Comunidad Valenciana in tables III (former programs 2078/92) and IV (new programs 1257/99).

Table III. Comparison of organic citrus growing subsidies. Former programs (regulation (ec) 2078/92)

Calabria	Introduction of organic agriculture	800 €/Ha
	Practice maintenance	720 €/Ha
Comunidad Valenciana	1st year	360.61 €/Ha
	2nd year	288.50 €/Ha
	3rd year and subsequent	216.36 €/Ha

Source: Peris E. (2002).

Table IV. Comparison of organic citrus growing subsidies. New programs (regulation (ec) 1257/99)

	Calabria		**Comunidad Valenciana**
	Preferential areas	*Non preferential areas*	
1rst & 2nd years	1,000 €/Ha	950 €/Ha	468.79 €/Ha (Surface modulation)
Subsequent	950 €/Ha	900 €/Ha	

Source: Peris E. (2002).

After analyzing tables III and IV, we can affirm that the Calabrian government's decision regarding organic citrus growing has been to subsidize the practise nearly the maximum allowed by Regulation (EC) 2078/92 (established at 1,000 €/Ha), and to the maximum allowed by Regulation (EC) 1257/99 under the new program. By contrast, we can consider the low level of the subsidies given to producers of organic citrus in the Comunidad Valenciana. Both regions present the same conditions regarding the established time periods, a minimum of five years of practice, as specified in the EC Regulations.

Calabria's former program related to Regulation (EC) 2078/92 established two different subsidies: one for introduction of organic agriculture practices, and another for the maintenance in the case the farmer had previously participated in an organic agriculture program. The difference between the two subsidies was about 10%, extended to all regional surface. Under the Comunidad Valenciana's former program, subsidies were modulated by the number of years of practice, so that in the first practise year, the grower received 100% of the premium value, 80% the second year, and 60% from the third to the fifth year.

In terms of new programs, the Calabrian government has introduced changes that distinguish between preferential and non preferential areas (depending on ecological considerations), and has decided to reduce premiums after the second year of practice. This diversification in preferential areas corresponds to Calabria's geophysical conditions, as intensive agricultural practises are only located in coastal plains.

However, in the Comunidad Valenciana, intensive practices are common throughout all the regional area, so other facts have been considered, such as the minimum surface needed to receive a subsidy, that was 1 Ha under the former program and is 0.5 Ha in the current one.

The last change introduced in the new program for the Comunidad Valenciana's is a result of certain modifications approved by the Rural Development Plan for Accompanying Measures in Spain. The change consist in the introduction of a surface modulation. Consequently, holdings with a surface of 40 Ha or less will receive the total subsidy (468.79 €/Ha, see table IV), holdings between 40 and 80 Ha will receive 60% of the subsidy (281.30 €/Ha), and holdings larger than 80 Ha, 30% (140.63 €/Ha). The objective of this new measure is help farmers with smaller holdings to face the higher production costs that occur naturally and to prevent at the same time situations in which farmers with larger holdings are awarded the greater part of European agriculture payments.

In brief, the most significant difference between these two regions is the amount of the premiums. Some of the subsidies in Calabria's former program are valued three times those of the Comunidad Valenciana's, when under the current programs they generally double the Comunidad Valenciana's values. The last changes introduced in the Comunidad Valenciana´s regional policy intend to favour small holdings, mainly considering the great difficulty of the compliance of Regulation (EEC) no. 2092/91 given the following agronomic conditions. While in Calabria organic citrus farms tend to be medium or large sized, located in hills and completely isolated from other farms, with the help of symbiosis with other crops like the olive tree, in the Comunidad Valenciana organic citrus farms are small sized and mixed with intensive citrus crop, without any natural barriers to isolate as citrus crop is completely located in the coastal plains. The results of both subsidy policies are analyzed in the next section.

3. Comparison of the impact of Regulation (EC) 2078/92 regarding organic citrus growing in Calabria (Italy) and the Comunidad Valenciana (Spain)

The European Council Regulation (EEC) 2078/92, of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside (currently repealed by Regulation (EC) 1257/99), generated important results relating to environmentally-friendly production methods in Calabria. In fact, Calabria is the second most important region in Italy in terms of organic agriculture landed surface. At the same time, Italy is the first European country in landed organic surface (Juliá J., Server R., 2000). We can also add, as confirmed in the available data, that pesticide use per Ha and year in Calabria is calculated as 50% less than in the rest of Italy (Gaudio F., 2002).

Now we should examine the effects of the application of European Council Regulation (EEC) 2078/92 regarding organic citrus growing. We will first compare figures of organic landed surface and organic citrus landed surface in Calabria and in the Comunidad Valenciana, including as well calculations of the annual variation rate in both concepts (see table V). Available data for establishing comparisons correspond to 1998 and 1999.

First of all, we should consider some general figures. Calabria's UAA (Useful Agricultural Area) is equivalent in percentage to that of the Comunidad Valenciana's, with 36.90% and 36.70% of their regional surface areas respectively. Citrus growing is much more important in the Comunidad Valenciana than in Calabria, as we can deduct from the 1999 figures. While the total citrus surface was equivalent to 22.47% of the UAA in the Comunidad Valenciana, in Calabria it was reduced to 7.68% of the UAA.

By contrast, if we analyze the total organic agriculture surface in both regions compared to the UAA values, organic agricultural practices may be considered as a great success in Calabria, with 10.61% of UAA, while it is only 2.10% in the Comunidad Valenciana. Two reasons may be given for this: the difficulty in establishing organic practices in the Comunidad Valenciana, as it is a coastal plain with a long tradition of intensive agricultural practises, and the larger payments that farmers are awarded in Calabria, which may also act as an incentive.

Nevertheless, Calabria's organic citrus surface compared to total citrus area in 1999 was about 14.2%, a value which is 0.12% in the Comunidad Valenciana. This result is influenced not only by the fact that Calabria has less total citrus surface, but also by the significant quantities of EU payments, as mentioned earlier.

We must also consider the importance of organic citrus growing within the total organic surface. It is higher in Calabria than in the Comunidad Valenciana during both years: 10% for Calabria in 1998 and 1999 as compared to and 1.61% of the total organic surface in 1998 and 1.30% in 1999 in the Comunidad Valenciana.

Between 1998 and 1999 organic citrus surface versus organic total surface has been expanded in Calabria while it has diminished in the Comunidad Valenciana, as evidenced by the annual variation rate calculations. The explanation of this fact is not an actual decrease of organic citrus surface in the latter, but rather a slight growth rate in the organic citrus surface compared with the growth rate of the other organic crops. In fact, an important group of holdings registered in the Comunidad Valenciana joined the agri-environmental program during the period 1998-1999, concretely for the organic production measure. However, most of them were dedicated to dry extensive crops, which tend to be managed organically much more easily than citrus crops.

Table V. Organic agriculture. Total surface and citrus surface variation. Data from 1998 and 1999

Surface (Ha)	**Calabria**	**Comunidad Valenciana**
Total regional S	1,508,000	2,323,700
Regional UAA	556,503	852,224
Regional UAA/ Total regional S	**36.9%**	**36.7%**
Total OA S 98	*45,808.4*	*12,179.2*
Citrus OA S 98	4,569.4	196.4
Citrus OA S/Total OA S 98	**9.9%**	**1.6%**
Total OA S 99	*59,079*	*17,947*
Citrus OA S 99	6,072	234
Citrus OA S/Total OA S 99	**10.3%**	**1.3%**
Citrus total S 99	42,776	191,551
AVR (Citrus OA S/Total OA S) 98-99	***3%***	***-19.2%***
AVR Total OA S 98-99	***29%***	***47.3%***
AVR Citrus OA S 98-99	***33%***	***19.2%***
Citrus OA S 99/Citrus total S 99	***14.2%***	***0.1%***
Total OA S 99/Regional UAA	***10.6%***	***2.1%***
Total citrus S 99/Regional UAA	***7.7%***	***22.5%***

S = Surface, UAA = Useful Agricultural Area, OA = Organic Agriculture, AVR = Annual Variation Rate

Source: Peris E. (2002).

Further, the annual variation rate of organic agriculture surface during the two year period is higher in the Comunidad Valenciana than in Calabria. This indicator shows the importance of the surface area

incorporated to the Comunidad Valenciana's program at that time. Nevertheless, the annual variation rate of organic citrus surface is higher in Calabria; thus, this indicator confirms the analysis presented herein.

To end with this section, we illustrate the discussion presented above in the next figure:

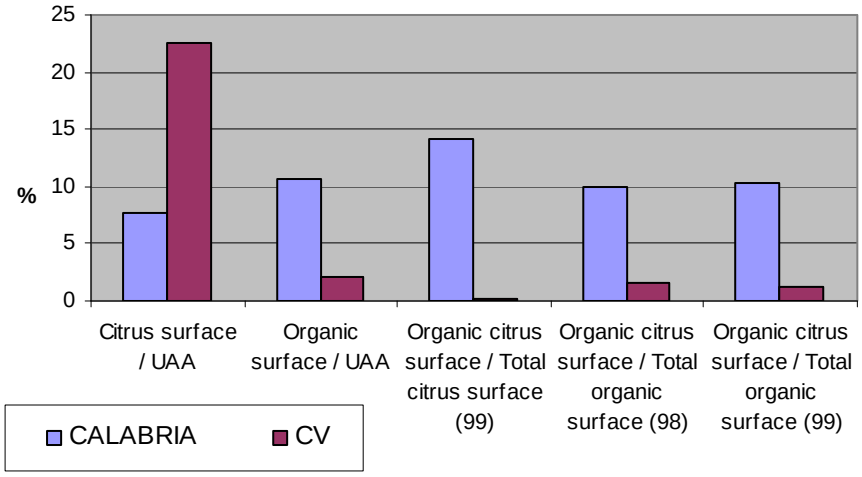

Figure I. Indicators of organic citrus growing in calabria and in the comunidad valenciana. Data from 1998 and 1999

4. Conclusions.

The objective of this paper has been to compare the results of the agri-environmental European policy during recent years as in other studies published before (Bruckmeier K., Ehlert W., 2002), but focused on the organic citrus cultivation in two European regions: Calabria (Italy), and the Comunidad Valenciana (Spain). The most important difference we have found within the two regions is related to the amount of the payments. They themselves are the main reason for the different results obtained, but we also have to consider the structure of property of organic holdings in both regions, and the different geophysical conditions that involve citrus crop.

We have seen the significant expansion of organic citrus growing surface in Calabria, while in the Comunidad Valenciana it has been less pronounced, and much more if we compare it with the total citrus surface. We can name two basic facts in Calabria's case: the considerable amount of premiums, more significant than they seem at first sight if we think about medium and large sized farms, as well as the higher values of organic products within the Italian market. An environment that helps to isolate organic citrus crop naturally also helps to find the conditions marked by Regulation (EEC) 2092/91 in an easier way.

However, the lower growth rate of organic citrus in the Comunidad Valenciana can be explained by three facts, which may be extended to organic agriculture in Spain:

- First of all, in the case of the Comunidad Valenciana, it is difficult for farmers to introduce organic agriculture practices in a coastal plain, considering the region's long history of intensive production methods. This sentence includes different aspects of citriculture in Spain: the high productivity rates of intensive citrus growing, that we have to translate in a high profitability of farms. Also the problem of conducting an organic citrus farm, generally small sized, and without natural barriers to isolate from other intensive citrus farms.

- Second, farmers are not able to obtain appropiate prices for their harvests, which could defray their higher production costs. The reason may be a lack of distribution channels for their products in Spain, that are not valued, at least in the internal market. Nevertheless, a few producers with small farms are not able to produce a consistent harvest to offer to the distribution channels, appart from the lack mentioned before.
- Last but not least, the amount of payments has not served as an incentive for a positive growth surface in the Comunidad Valenciana or in Spain, so we conclude that the Spanish Public Administration should evaluate the application of higher subsidies similar to those of other European countries, namely Italy. We consider that higher subsidies regarding organic agriculture could help Spanish producers to decide to incorporate their farms to the EU programs. The current level of subsidies doesn´t equilibrate the losses a producer can experiment when converting or practising organic farming, mainly considering the high profitability of intensive citrus growing and the difficulties to manage the organic citrus systems in Valencia.

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- Council Regulation (EEC) no. 2078/92 of 30 June 1992 on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside.
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