

The new olive grove landscape of Andalusia

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Summary

The two decades preceding the year 1986, when Spain joined the European Economic Community, were critical for the Andalusian olive groves. From that moment, however, we have witnessed a productive intensification process and a significant expansion of the area dedicated to olive growing has been observed. The main contributing factor to this recent dynamic was the implementation of the Common Agricultural Policy (CAP) budget, which introduced strong productive incentives. Its influence is considered to be revolutionary, due to transformations which have been not only profound but also widespread. In fact, *traditional olive groves* have been reduced to minimum portions.

Faced with this model, the CAP popularized *intensive olive groves*, characterized by high-density plantations, systematic irrigation and mechanized harvesting. Due to all these changes more abundant olive harvests have been cultivated, although this has been achieved at the expense of serious environmental impact. Another key year which allows us to understand the recent landscape transformations of the Andalusian olive groves is 1998, when the guarantee of a minimum price disappeared and production subsidy payments became limited. We encounter an outlook which is speeding up the appearance of *hyper-intensive olive groves* and involves incorporating completely new approaches.

Our intention is to introduce the associated landscapes to each one of these three great olive growing models in the Andalusian region, arguing the causes which have allowed them to appear and analysing spatial location guidelines; reflecting upon the ways of exploitation of the resources involved and explaining their socioeconomic budgets. To finish, the immediate prospects of each model are presented.

Key words: Southern Spain. Rural Geography. Andalusia. Monoculture. Olive grove. Common Agricultural Policy.

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1. Introduction.

Traditional olive tree cultivation used to be founded on the principles of organic economy, together with the systematic use of human and animal labour. Indeed, livestock constituted a basic element, entering the system not only as work force but also as producers of their much prized manure, one of the most important sources of nutrients (another being green manure). Despite the fact that the ground reserved for their cultivation was not of top quality, the harvests managed to be profitable as varieties which adapted to local weather conditions were planted, wide areas of plantations were established and tasks were realised which allowed for a correct use of the erratic, and generally, scarce rainfall which is typical of the Mediterranean area. Among the tasks employed the most outstanding are those which reduced erosion or which limited evaporation through capillary action. All in all, alternate good and bad harvests were accepted as inevitable. The phenomenon known as “*vecería*”³ was typical of a system which was self-sustained, although limited from a productive point of view (Naredo Pérez, 1983).

In economic terms, this system was viable as long as a good relation was sustained between workers’ salaries and the price of the final product (mainly oil), as was the case during the autarkical period which followed the end of the Spanish Civil War. When the prices of harvesting increased, by far the greatest expenditure which proprietors of fairly large olive groves had to meet, a paroxysmal situation was experienced by the less productive olive groves (López Ontiveros, 1978). In fact, in the 1970s the Spaniards witnessed how olive trees were abandoned and pulled up: the agricultural surface area dedicated in the region to productive olive groves, which had been growing since the beginning of the XXth century, underwent an evident decline from 1974, and did not recuperate previous levels until 1986, when it reached 1.208.631 *ha* (Zambrana y Ríos, 2006).

Another different way of combating this crisis was through productive intensification. The Spanish Administration participated actively in this process by employing different inventories, diagnoses and modernisation programmes for nearly two decades (Guzmán Álvarez, 2006). To be precise, between 1972 and 1979 the “Plan de reconversión y reestructuración productiva del olivar” [Policy for the Reconversion and Productive Restructuring of Olive Groves] had been in force, which had set three main goals: the growth or reconversion of olive tree land (intensive plantations, increased density and replanting); improvements to the existing groves (grafts, irrigation, subsoiling, clearing of stones and drainage) and intervening in the marginal groves (uprootings or associations with other crops). All in all, 243,792 *ha* took part in this initiative in Andalusia. The policy entitled “Plan de reestructuración del olivar mejorable y reconversión de comarcas olivareras deprimidas” [Policy for the restructuring of improvable olive Groves and the reconversion of depressed olive grove regions] (1982-1988) could be considered as a continuation of the previous policy. Furthermore, in the two main goals set (restructuring and reconversion), it was put into practice over a surface area of 26,188 and 40,589 *ha* respectively.

³ This term refers to the fact that after a bumper harvest a small harvest follows the next year. This is usually a biennial phenomenon but not always, depending on whether meteorological conditions are favourable or indeed whether soil nutrients are available in sufficient quantity to avoid this tendency.

This crisis scenario changed drastically when Spain became a member in 1986 of what was then called the European Economic Community. After a brief period of transition, the Andalusian olive grove began to benefit from the privileges established by the Common Agricultural Policy (CAP). To be precise, the measures contemplated by the Common Market Organisation for vegetable fats, in force since 1966, set two fundamental mechanisms in motion: intervention prices and subsidies linked to production. As the olive cultivator was assured the sale of his entire production at a much higher price than the international markets, receiving yet more subsidies for higher yields, he found himself immersed in a permanently stimulating productivity race.

2. Two decades of expansion and productivity improvements.

Capitalist-orientated agriculture is principally characterised by its regional specialisation and its productive intensity; and both these aspects are well reflected in the recent dynamics of the Andalusian olive grove. As regards the former (see Table 1), one could say that the concentration of this crop in the region was already significant in 1986, as it monopolised 58.69 % of all Spanish crops. However, this rate did not stop increasing until it reached its height at the turn of the new century and it has recently stabilised at a little more than 61 %. Nevertheless, in terms relative to its growth, the figures are much higher, as three quarters of the growth of cultivated land in the whole country was owing to the expansion experienced in Andalusia. Slightly more than 1.5 million *ha* is occupied by what is by far the first Andalusian crop.

Table 1. Evolution of total olive grove surface area⁴ (*ha*) in Andalusia and in Spain.

Year	Andalusia (A)	Spain (B)	% A/B
1986	1,232,018	2,099,052	58.69
1991	1,285,651	2,127,171	60.44
1996	1,371,089	2,254,537	60.81
2001	1,503,276	2,429,300	61.88
2005	1,505,236	2,465,258	61.06
<i>Growth 1986-2005</i>	<i>273,218</i>	<i>366,206</i>	<i>74.61</i>

Source: Ministerio de Agricultura, Pesca y Alimentación [Spanish Ministry for Agriculture, Fishing and Food] and our own elaboration.

Productive intensification is, if possible, even more spectacular. The harvests of the period spanning 1996-2005 nearly doubled those of the period spanning 1986-1995 in the case of olive groves destined for the oil mill. With these yields one can also observe a clear rising tendency throughout the time span considered, as shown in Table 2. The results are equally better as regards the production of table olives.

⁴ Cultivated land, without considering whether it is already productive or not, destined to obtain both table olives and olive oil, either on unirrigated or irrigated land.

Table 2. Development of the production of olives (*mt*) and yields (*kg/ha*) in Andalusia, 1986-2005.

Years	Olive for the olive mill			Table Olives		
	Production	Yield Unirrigated land	Yield Irrigated land	Production	Yield Unirrigated land	Yield Irrigated land
Average 1986/1995	2,108,243	1,743	3,009	159,725	1,521	2,515
Average 1996/2005	3,901,429	2,712	4,389	266,462	2,485	4,050
Average 1986/2005	3,004,836	2,227	3,699	213,093	2,003	3,282

Source: Ministerio de Agricultura, Pesca y Alimentación and Consejería de Agricultura y Pesca of the Junta de Andalucía [Spanish Ministry for Agriculture, Fishing and Food and the Department for Agriculture and Fishing of the Regional Government of Andalusia].

This improvement is due largely, although not exclusively, to the steady expansion of irrigated land; indeed, this has been the key to the regularisation and increase of the harvests of the areas which have advanced the most in this respect. As we have already explained in an earlier publication (Gallego, Sánchez and Araque, 2002), the option to irrigate land was influenced largely by the disastrous effects caused by the exceptionally extended dry period between 1992 and 1995 and the province of Jaén has been the main protagonist in this process.

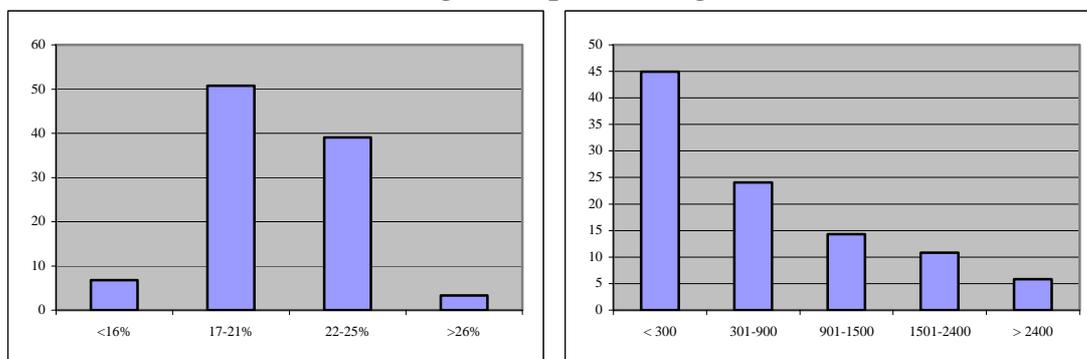
3. A monoculture of considerable internal diversity.

Far from being similar, Andalusian olive groves are enormously diverse, especially if we consider ecological, agronomical and economic variables. On the two opposing extremes of this scale we could place the aforementioned hyper-intensive olive groves and the mountain olive groves with low productivity. Between both these types, the variety of other types is extremely wide. The most recent attempt to characterise this multifarious situation (Junta de Andalucía, 2003) considered the following variables: agrological capacity of the soil, rainfall, size of the plantation, slope, degree of division into plots, varieties of olive trees, irrigated or unirrigated cultivation, density of the plantation, number of trunks per tree, number of trunks per surface area (*ha*), production (*kg/ha*) and yield. Among the main conclusions of this study we could highlight the following:

1. As regards production, the range is really spectacular, starting with less than 500 *kg/ha* going up to cases of more than 15,000 *kg/ha*. Either way, scarcely 20% of the cultivated surface area shows averages which we could consider to be elevated (higher than 5,000 *kg/ha*).
2. The differences in terms of oil yields are also considerable (Graph 1), a fact which is related directly to the variety cultivated, but also to the particular circumstances of each agricultural campaign.
3. Finally, a good synthesis of diversity is represented by the economic profit margin of the plantations. The most significant datum is that the greater part of the olive grove surface area presents low or non-existent profits, and due to this, viability is very dependent on the European Community's system of subsidies

linked to production. Nearly 50% of the crops take in profits of less than 300€/year and it is thought that some 350,000 *ha* provide no profit at all (Graph 2). If these subsidies were not counted, this last quantity would rise to 786,000.

Graphs 1 (left) and 2 (right).
Surface distribution according to oil yields (%) and olive grove surface area according to net profit margin (in €)



Source: Consejería de Agricultura y Pesca [Department for Agriculture and Fishing] (2003) and our own elaboration

4. Some representative examples in the province of Jaén.

4.1. “La Loma”: the CAP’s extreme productivity.

The Agrarian area of “La Loma” is the paradigmatic example of implicit productivity in the Common Market Organisation (CMO) for vegetable fats of 1966. In fact, in very little time it has become the greatest productive area in the world. Its agricultural specialisation, which reaches figures bordering totality, is also due to the existence of a series of favourable environmental factors, such as good agronomic quality of its soils and the possibility of having access to hydric resources in the subsoils. This could explain the spectacular figures collected in Table 4: nearly 95% of its cultivated surface area is planted with olive trees, which adds up to 71% of the whole geographic area of the towns and cities concerned, with cases such as that of Canena (evidently the smallest of all), whose whole cultivated surface area is dedicated solely to this Mediterranean tree.

Table 3. Surface area transcendancy of olive groves (2006) in relation to the cultivated and geographic surface area of the municipalities of La Loma.

Municipality	[A] Olive grove surface area (<i>ha</i>)	[B] Cultivated surface area (<i>ha</i>)	[C] Geographic surface area (<i>ha</i>)	% [A/B]	% [A/C]
Baeza	1,6648	17,149	19,448	97.08	85.60
Begíjar	3,296	3,732	4,319	88.32	76.31
Canena	1,399	1,399	1,500	100.00	93.27
Ibros	4,689	4,949	5,574	94.75	84.12
Iznatoraf	4,973	4,983	8,767	99.80	56.72
Lupión	2,176	2,246	2,434	96.88	89.40

Rus	2,887	2,907	4,803	99.31	60.11
Sabiote	8,286	9,207	11,252	90.00	7.64
Torreperogil	7,023	7,807	91,22	89.96	76.99
Úbeda	28,824	31,175	40,008	92.46	72.05
Villacarrillo	14,786	15,381	24,281	96.13	60.90
Villanueva Arzbpo.	11,205	11,224	17,863	99.83	62.73
Total	106,192	112,159	149,371	94.68	71.09

Source: Delegación provincial de la Consejería de Agricultura y Pesca of Jaén [Provincial Delegation of the Department for Agriculture and Fishing of Jaén].

When Spain became a member of the European Union, olive groves already covered 64% of her whole cultivated surface area, producing yields averaging between 2,200 *kg/ha* of unirrigated land and 2,500 *kg/ha* of the then scarce irrigated land which was destined for this use. The expansion of this crop has been made, above all, in detriment to herbaceous crops of unirrigated land. But this has also been brought about through the densification of the inner part of the traditional olive grove plots on the disappearance of other crops which were previously associated with the olive tree: cereals, plants for fodder, vines or even almond trees (MAPA, 1986). Current figures show that the surface area cultivated of this crop is higher than 106,000 *ha*; yet this surface area of cultivated land had already been reached in 1998. In the latter, apart from confirming the high growth in surface area which can be seen during the years immediately after the European Community effect, what is most spectacular is the internal recomposition of these quantities between unirrigated and irrigated land. The latter have not stopped growing throughout the period analysed, meaning that now more than half of the olive groves of the region are irrigated.



Photograph 1. Air photograph of intensive plantations with different levels of density (Villacarrillo).

4.2. Superintensive production methods.

The final incomes of the olive cultivators are currently very dependent on subsidies linked to production. A scenario in which the latter were to be reduced significantly, or even disappear, would entail a deep restructuring of the sector. Although strategies employed to differentiate produce by its quality are already a reasonable alternative, one cannot forget that the majority opt to produce oil in bulk, a situation which is not at all promising. To begin with, it is probable that a significant number of the less productive olive groves fall below the profit line, with the subsequent risk of being abandoned. Unless market prices compensate losses (something which is difficult if demand is not significantly raised, as young olive groves are beginning to produce and become mature and the increase in the number of world plantations make the offer grow continuously), olive groves which are not intensive will be forced to increase their harvests, improve production costs, or both things at the same time, if competitiveness and a level of benefit are to be maintained.

This is where proposals arise from innovative companies and important investment groups which put their faith in superintensive olive groves. According to the experience of recent years, they offer an apparently profitable solution. To begin, the oils obtained are of a high quality, especially due to the fact that the harvesting machines collect the entire amount of olives while still on the trees, without them touching the ground or being damaged. The speed of recollection⁵ allows for the latter to take place at the ideal moment of maturing, and the total mechanisation of this process markedly reduces its costs⁶. Furthermore, they point out reasons why the phenomenon known as “vecería”⁷ could be corrected with this method, as the tender shoots of the tree are not damaged and the ideal varieties such as the Arbequina olive and other improved hybrids, allow for an early harvest, meaning that the tree has time to recover before the next bloom. Moreover, its time of production is precocious and production extraordinary: on the estate “El Llano” (Écija, Seville) a record production of 17,420 *kg/ha* has been noted in an olive grove of not yet three years of age. Consequently, we are defining a model of production which needs a big investment but which can be recuperated very quickly⁸.

It has been calculated that the surface area exploited of this type of olive grove in Spain could already be more than 20,000 *ha*, and estimated to grow at a rate of 6,000 *ha/year*. In countries such as Morocco, Tunisia, Italy, Australia, the United States and Portugal these types of plantations are also being introduced, although without surpassing the annual figures which we have offered in the case of Spain. It is also clear that in some of these countries it has been the very money and people of Spanish origin of the olive producing sector which have acted as protagonists in these processes. The best-known example is that of the Portuguese region of Alentejo, where the Alqueva dam supplies water to 110,000 *ha* of new irrigated plots.

This news has been received with interest, although at the same time, with concern by the olive cultivators of Jaén. Each day it is clearer to perceive that in the

⁵ It is calculated that a hectare with 2,000 olive trees can be harvested in two and a half hours.

⁶ According to the company Todolivo (of which SOS-Cuétara owns 50%), the costs at source of a *kg* of olive oil could be reduced to an average of 0.60 € (*El País Negocios*, 8th July 2007).

⁷ See footnote no.2.

⁸ This information is available at <http://www.todolivo.es>

near future there will be a strong global rivalry and an increase in offer as a consequence of the new superintensive olive groves throughout the world, a situation in which traditional farmers will find it difficult to compete and where those who have intensified their exploitations during the growth period of the CAP will lose income. Among the scarce examples of the superintensive olive grove of Jaén, we could highlight “La Marquesa”, an estate situated in the whereabouts of the village of Vilches, which constitutes a magnificent example of the rapid alteration of the landscape, with profound changes in the uses of the soil. This property, of some 1,100 *ha* in size, was bought in the mid 80’s by a well-known businessman of the bullfighting sector, José Luis Martín Berrocal, who managed it through the Sociedad Cernuño, S.A. At that time, the system of profiting from the farm reproduced a pattern which to a certain extent was generalised in the cattle-orientated exploitations, as cereals and stubble were alternated, while some 70 *ha* of traditional olive grove were also exploited. After a few later changes, in 2005 it was purchased by a Seville real estate business, Projisa, S.A., from when an ambitious production reconversion plan is put into effect: bullfighting cattle is consolidated and a gradual transformation process of the olive groves of those lands more suited to their cultivation is begun, to the point that currently half the estate is flooded with small olive groves. In this case, a whole series of contributing factors come together to make the development of this plan feasible: suitable soil, the availability of water (both superficial and underground), adequate size of the business, adequate technical management and a project for the building of an oil mill.



Photograph 2. Superintensive olive grove at two years of age (La Marquesa estate, Vilches, spring 2008).

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