

Annexe 13 du rapport d'évaluation

# SET ASIDE COMUNITARY MESURES EVALUATION

## REGIONAL REPORT

# Extremadura SPAIN



**DEPARTAMENTO DE PROYECTOS Y  
PLANIFICACIÓN RURAL  
ESCUELA TÉCNICA SUPERIOR DE  
INGENIEROS AGRÓNOMOS  
UNIVERSIDAD POLITÉCNICA DE MADRID**



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## 2. REGIONAL CONTEXT

### 2.1. Synthetic description of the region at the agricultural level

Extremadura is located in the southwestern corner of the Spanish *meseta*. It covers just over 4200000 has. and represents 8'34 % per cent of the total national surface. It is predominantly flat or undulating, with over 80% of the land between 200 and 600 metres over the sea level. A map of the location of this region appears in annex 1.

#### 2.1.1. Climate

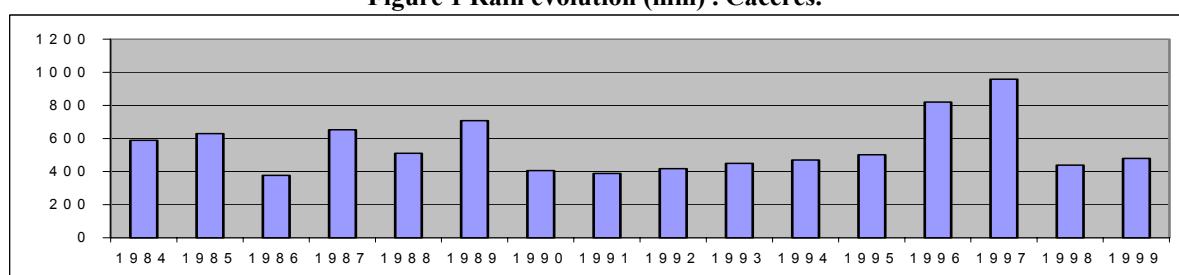
Climatological data detailed in Table 1 is the mean value registered in the observatories existing in the region during the period 1961-1990. Figure 1 shows annual rain registered in Caceres from 1984 to 1999.

**Table 1 Climatological data. Extremadura. Average 1961-1990**

	Rain (mm)	Rain days	Mean temperature	Frost days
Badajoz	486	78	16'4	21,4
Caceres	487	84,9	16	45

Source: INM Spain

**Figure 1 Rain evolution (mm) . Caceres.**



Source: INE

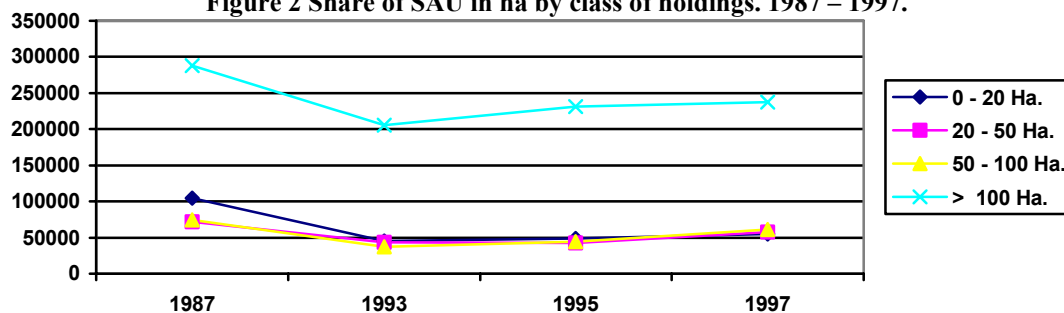
#### 2.1.2. Population

Population in Extremadura has changed from 879641 inhabitants in 1900 to 1100538 inhabitants in 1998, reaching the maximum population in 1960 (1376036 inhabitants). According to INE the share of rural population over total is 58 % in 1988. Agriculture employed over 14'74 % of the active population in 2000.

#### 2.1.3. Types of holdings

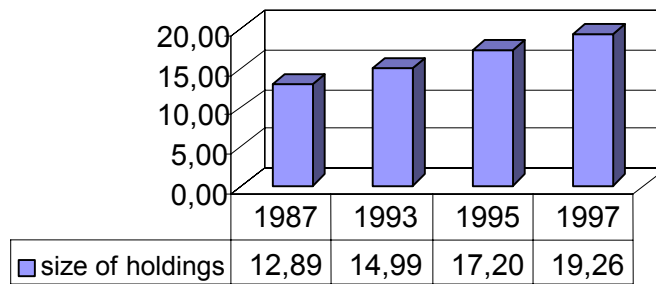
The graphic shows that the majority of the land belongs to holdings over 100 ha . In the period 1987-1993 there is an abandonment of land. Part of it is recovered in the period 1993 1997.

**Figure 2 Share of SAU in ha by class of holdings. 1987 – 1997.**



Source: INE

**Figure 3 Holdings medium size evolution.**

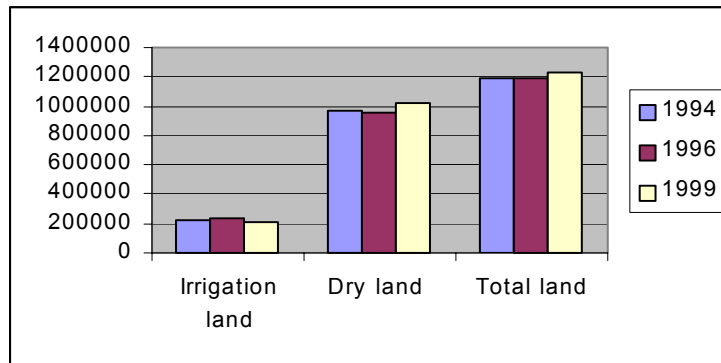


Source: INE

#### 2.1.4. Irrigation land

The figure below shows cultivated irrigation land evolution during the period 93-99 in comparison with dry and total cultivated land.

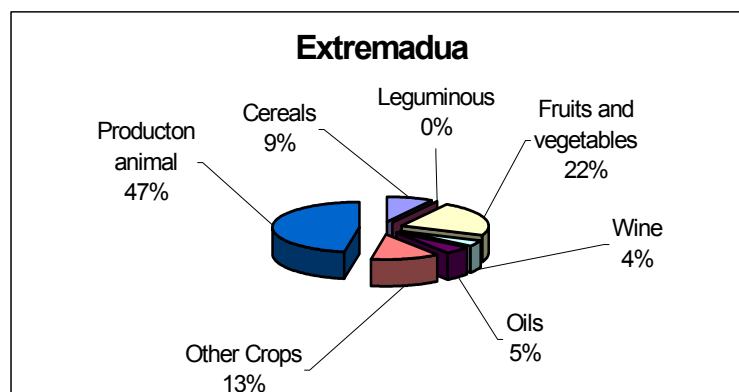
**Figure 4 Cultivated land evolution in Extremadura.**



Source: Mapa

#### 2.1.5. Main regional farm productions

**Figure 5 Share of farm production (Source MAPA)**

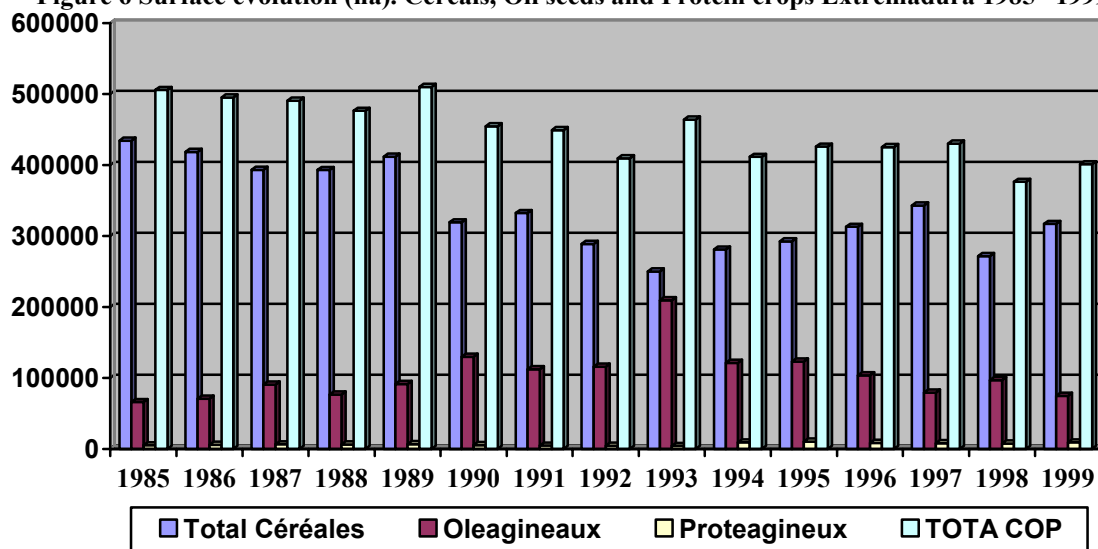


Source: MAPA

#### 2.1.6. Place of the COP over the period 1985 – 1999

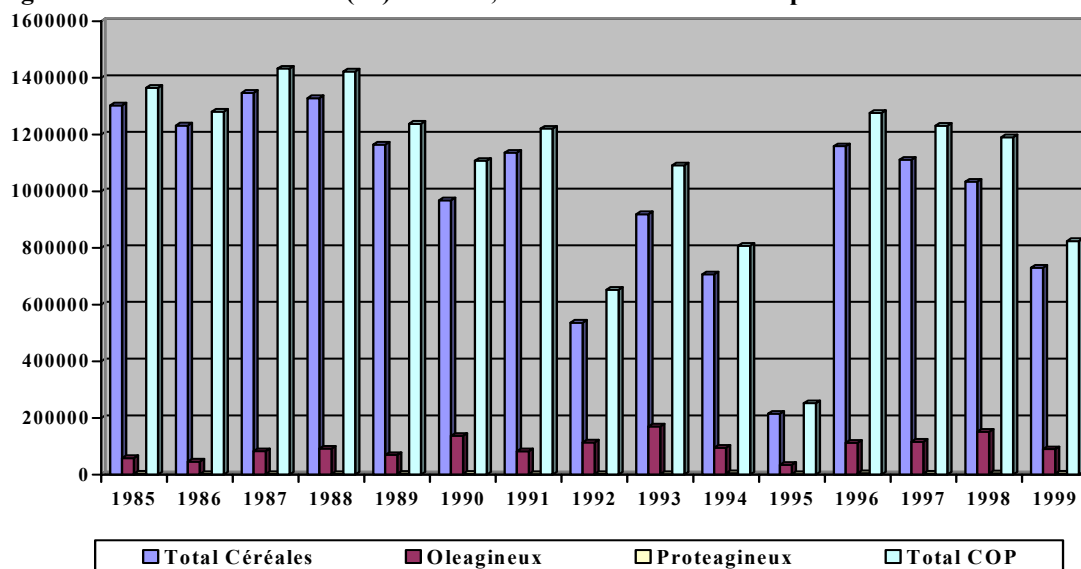
The figures below show surface and production evolution (by group of crops) in Extremadura. Detailed data appears in annex 2.

**Figure 6 Surface evolution (ha). Cereals, Oil seeds and Protein crops Extremadura 1985 –1999.**



Source: MAPA

**Figure 7 Production evolution (ha). Cereals, Oil seeds and Protein crops Extremadura 1985 -1999**



Source: MAPA

### 2.1.7. 2.1.7. Fallow

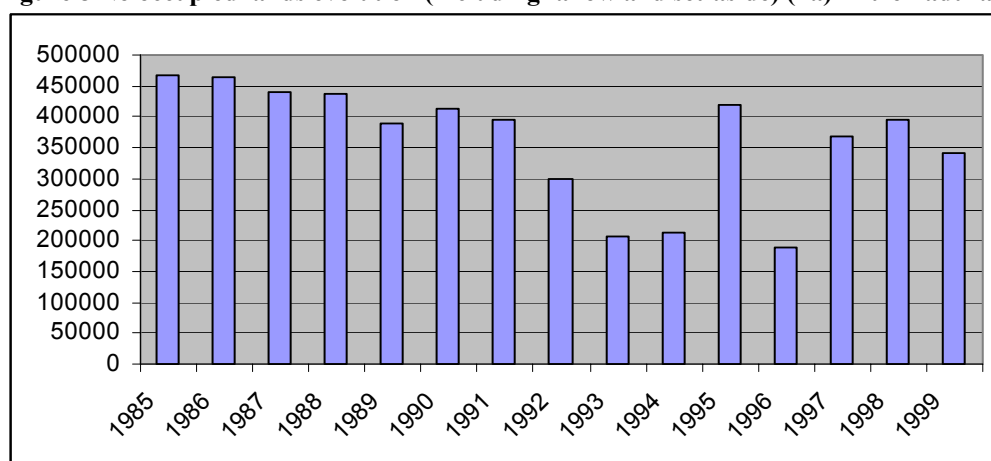
Fallow data available includes other no occupied lands, that is to say, abandoned lands and temporarily out of use lands. So these surfaces are influenced by different factors and it is difficult to find a relationship between them and set-aside rates. Nevertheless in the case of Extremadura no occupied lands decreases from 1993. This leads us to think that because of the compensatory payments there is temporarily out of use lands that is cultivated again.

**Table 2 Fallow surface and compulsory set aside rate in the period 1985 to 1999**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Surface (ha)	466100	463900	441313	438376	390502	413659	396520	299529	206444	213733	417910	189900	369135	395225	340816
Compulsory set-aside ratio									15 %	15 %	12 %	10 %	5 %	5 %	10 %

Source: MAPA

**Figure 8 No occupied lands evolution (including fallow and set-aside) (ha) Extremadura.**



Source: MAPA

## 2.2. Set Aside implementation context

**Table 3 Set aside implementation data. Extremadura. Dry land.**

	1993/94		1994/95		1995/96		1996/97		1997/98		1998/99		1999/00	
Compulsory set aside rate	15%		15%		12%		10%		5%		5%		10%	
<b>COP applicants number (professional scheme)</b>	n.d.		<b>5792</b>		<b>93957</b>		n.d.		<b>8648</b>		<b>9409</b>		n.d.	
SCOP (ha) all producers (COP + set-aside)	391583		399674		425461		439360		445593		441689		469201	
SCOP (ha ) professional scheme (COP + set-aside)	274062		324077		348416		370705		378128		391748		410471	
SCOP (ha) simplified scheme	117522		75598		74492		992		66551		50103		57939	
Real set-aside scheme (set-aside/SCOP all producers)	10,55%		21,58%		20,06%		18,45%		17,37%		28,57%		24,67%	
Professional set-aside rate (set-aside/SCOP professional scheme)	15,07%		26,61%		24,49%		20,87%		20,46%		32,21%		28,20%	
Total set-aside (ha)	41311		86247		85339		81058		77382		126186		115751	
Rotational set-aside (ha)	41311		51594		12368									
Total set-aside (ha) (apart from extraordinary)	41311		86247		85339		81058		77382		126186		115751	
Compulsory set-aside	41311		54098	63%	60230	71%	40692	50%	28059	36%	41714	33%	66624	58%
Voluntary set-aside			32149	37%	25109	29%	40366	50%	49323	64%	84472	67%	49127	42%
Paid at 48'3 ecus set-aside														
No paid set-aside														
No food set-aside			628	0,7%	629	0,7%	71	0,1%	30	0,04%	196	0,2%	59	0,05%
Five year set-aside (R.2328/91)														
Extraordinary set-aside														

Source CE DG Agriculture (MAPA)



**Table 4 Set aside implementation data. Extremadura. Irrigation land.**

Table 4 Set aside implementation data: Extremadura: Irrigation land.													
	1993/94	1994/95		1995/96		1996/97		1997/98		1998/99		1999/00	
Compulsory set aside rate	15%	15%		12%		10%		5%		5%		10%	
COP applicants number (professional scheme)		4402		32666		n.d.		18262		17986		n.d.	
SCOP (ha) all producers (COP + set-aside)	122495	84128		113763		48184		5045		45026		50748	
SCOP (ha ) professional scheme (COP + set-aside)	91632	70780		101982		43244		45459		41345		45718	
SCOP (ha) simplified scheme	30862	13348		11558		4911		4528		3524		4991	
Real set-aside scheme (set-aside/SCOP all producers)	11,31%	21,61%		22,35%		10,72%		76,93%		7,43%		10,02%	
Professional set-aside rate (set-aside/SCOP professional scheme)	15,11%	25,68%		24,94%		11,94%		8,54%		8,09%		11,12%	
Total set-aside (ha)	13850	18177		25431		5164		3881		3345		5083	
Rotational set-aside (ha)	13850	10347		3331									
Total set-aside (ha) (apart from extraordinary)	13850	18177		25431		5164		3881		3345		5083	
Compulsory set-aside	13850	11513	63%	15716	62%	4387	85%	3239	83%	2752	82%	4769	94%
Voluntary set-aside		6664	37%	9715	38%	777	15%	642	17%	593	18%	314	6%
Paid at 48'3 ecus set-aside													
No paid set-aside													
No food set-aside		15	0,1%	144	0,6%	2	0,04 %						
Five year set-aside (R.2328/91)				25431									
Extraordinary set-aside													

Source CE DG Agriculture (MAPA)

### 2.2.1. Characteristics of the Regionalisation plan. Extremadura

**Table 5 Base Area Extremadura (has)**

CCAA	1994			1997		
	Dry land	Irrigation land		Dry land	Irrigation land	
		Total	Maize		Total	Maize
EXTREMADURA	435.125			463.127	121.500	57.825
ESPAÑA	8.096.192	1.123.521	720.360	7.848.624	1.371.089	403.360

Source: MAPA

COP base area in Extremadura represents 5'9 % in dry land and 8'8 % in irrigation land over total national COP.

**Table 6 Yield cereals distribution. Mean value. Extremadura**

1994				1997			
Dry land	Irrigation land			Dry land	Irrigation land		
Mean yield Tm/Ha	Mean yield. Tm/Ha	Maize yield Tm/Ha	Other cereals yield Tm/Ha	Mean yield Tm/Ha	Mean yield. Tm/Ha	Maize yield Tm/Ha	Other cereals yield Tm/Ha
1,4	7,2	7,6	4,4	1,5	6,0	6,5	3,2

Source: MAPA

The table above shows mean values in the region as a whole. The region is made up of rural areas each one being assigned different yields. Every rural area yields are detailed in annex 3 as well as a map showing homogeneous areas in relation to regionalisation plans.

**Table 7 Regionalisation plan bases. Extremadura. 1.**

<b>Professional Scheme - Dry land</b>												
Year	Cereals			Oilseeds			Protein seeds			Set Aside		
	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.
93	25	1,4	35	210,7	1,4	295	78,49	1,4	109,89	68,83	1,4	96,362
94	35	1,4	49	222,1	1,4	311	78,49	1,4	109,89	68,83	1,4	96,362
95	54,34	1,4	76,076	0	1,4		78,49	1,4	109,89	68,83	1,4	96,362
96	54,34	1,4	81,51	94,24	1,4	141,36	78,49	1,4	117,74	68,83	1,4	103,245
97	54,34	1,5	81,51	83,87	1,5	125,805	78,49	1,5	117,74	68,83	1,5	103,245
98	54,34	1,5	81,51	94,23	1,5	141,345	78,49	1,5	117,74	68,83	1,5	103,245
99	58,67	1,7	99,739	81,74	1,7	138,958	72,5	1,7	123,25	58,67	1,7	99,739

Source: MAPA

**Table 8 Regionalisation plan bases. Extremadura. 2.**

<b>Simplified Scheme Dry land</b>									
Year	Cereals			Oilseeds			Protein seeds		
	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.
93	25	1,4	35	25	1,4	35	25	1,4	35
94	35	1,4	49	35	1,4	49	35	1,4	49
95	54,34	1,4	76,076	54,34	1,4	76,076	54,34	1,4	76,076
96	54,34	1,4	76,076	54,34	1,4	76,076	54,34	1,4	76,076
97	54,34	1,5	81,51	54,34	1,5	81,51	54,34	1,5	81,51
98	54,34	1,5	81,51	54,34	1,5	81,51	54,34	1,5	81,51
99									

Source: MAPA

**Table 9 Regionalisation plan bases. Extremadura. 3.**

<b>Professional Scheme - Irrigation land</b>									
Year	Other Cereals			Maize					
	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.			
93	25	4,4	110	25	7,6	190			
94	35	4,4	154	35	7,6	266			
95	54,34	4,4	239,096	54,34	7,6	412,984			
96	54,34	4,4	173,888	54,34	7,6	353,21			
97	54,34	3,2	173,888	54,34	6,5	353,21			
98	54,34	3,2	173,888	54,34	6,5	353,21			
99	58,67	3,8	222,946	58,67	7,7	451,759			

	Oilseeds			Protein seeds			Set Aside		
	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.
93	40,9722	7,2	295	78,49	7,2	565,128	68,83	7,2	495,576
94	43,1944	7,2	311	78,49	7,2	565,128	68,83	7,2	495,576
95		7,2		78,49	7,2	565,128	68,83	7,2	495,576
96	94,24	7,2	678,53	78,49	7,2	565,128	68,83	7,2	495,576
97	83,87	6,2	519,99	78,49	6,2	486,638	68,83	6,2	426,746
98	94,23	6,2	584,23	78,49	6,2	486,638	68,83	6,2	426,746
99	81,74	7,1	580,35	72,5	7,1	514,75	58,67	7,1	416,557

Source: MAPA

**Table 10 Regionalisation plan bases. Extremadura. 4.**

<b>Simplified Scheme Irrigation land</b>												
<b>Year</b>	<b>Other Cereals</b>			<b>Maize</b>			<b>Oilseeds</b>			<b>Protein seeds</b>		
	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.	€/t.	t./ha.	€/ha.
93	25	7,2	180	25	7,2	180	25	7,2	180	25	7,2	180
94	35	7,2	252	35	7,2	252	35	7,2	252	35	7,2	252
95	54,34	7,2	391,248	54,34	7,2	391,248	54,34	7,2	391,25	54,34	7,2	391,248
96	54,34	7,2	391,248	54,34	7,2	391,248	54,34	7,2	391,25	54,34	7,2	391,248
97	54,34	6	326,04	54,34	6	326,04	54,34	6	326,04	54,34	6	326,04
98	54,34	6	326,04	54,34	6	326,04	54,34	6	326,04	54,34	6	326,04
99												

*Source: MAPA , FEGA*

### **2.2.2. Traditional fallow Rate**

Traditional fallow rates are specific for each rural area. The detail is in annex 3

### 3. ANSWER TO QUESTIONS 411 to 421

To answer these evaluation questions we have performed a **quantitative analysis** of official data<sup>1</sup>, finished off with a **quantitative analysis** taken from surveys made to farmers<sup>2</sup> and interviews performed to managers and experts<sup>3</sup> familiarised with this sector or with some specific aspects of the implementation of the set aside of land.

To analyse surface area, production and yield of COP crops official data and the set asides and fallow, we have taken a reference period before the implementation of land set aside and we have extracted the trend of this period to compare it with the data obtained during the period of implementation of the set aside of land. The outcomes of this analysis were compared and finished off with the data obtained from the surveys made to farmers and the answers of managers and experts. Finally, we have summarised quantitative and qualitative information to give a synthetic answer to the evaluation questions.

#### 3.1. Question 4.1.1:

**Did compulsory set aside and voluntary set aside measures contribute, significantly, to the arable crop supply control? What is their contribution in particular in reducing of surplus cereal?**

- **Synthetic answer**

*During the period 93-99 the average COP surface area decreases in a 12 % with relation to the average COP production of the previous period. Nevertheless this surface area had a downward trend and during the period 93- 99 it is maintained only a 4 % below the surface area it might be expected with relation to the previous period trend. This indicates that the implementation of set aside of land scarcely influences a decrease of COP surface area and that during the period 93-99 land where the set aside is located is recovered.*

*In the period 93-99 COP production decreases in a 21 % with respect to the COP production of the previous period. COP production decreases almost twice the COP surface area, as a result of a drop in yields. This decrease of production is not a result of the set aside of land policy.*

*However, we can say that, not having the set aside of land measure but keeping the compensatory payments, the production would be a 12'6 % higher. This increase of production does not correspond with the set aside land area (a 19 % of the total) due to the location of the majority of this in marginal land.*

*Compensatory payments policy have caused the substitution of a part of cereal surface area by other COP crops (specially sunflower), so the decrease in the cereal production is bigger than the one of the other COP crops, not being this a result of the set aside of land*

- **Detail of answer**

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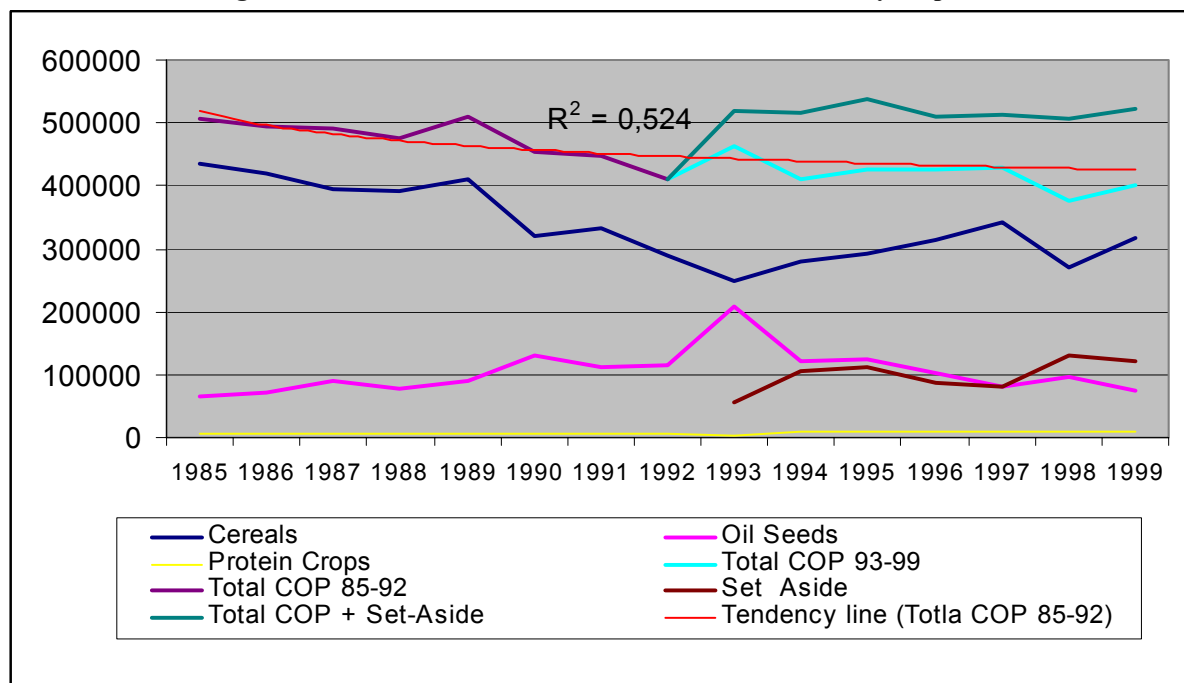
<sup>1</sup> VID Anex 2 Production and Surface COP data

<sup>2</sup> VID Anex 6 Survey results

<sup>3</sup> VID Anex 4 Managers and experts interviewed

COP surface area in Extremadura has a downward trend along the period 85-92 decreasing in 100.000 has. from 1985 to 1992. In the period 93-99 the average COP surface area decreases approximately 50.000 has. (12 %) with respect to the average surface area of previous period.

**Figure 9 Evolution and distribution of COP surface area by crops.**



*Source: data taken from MAPA and FEGA*

Nevertheless, Figure 9 shows that the surface area had a downward trend and the COP surface area for the period 93-99 (Light blue line) remains in an average of a 4 % below the surface area that would be expected for the same period as indicated by the trend line extracted for the previous period (red line)

The total surface area (**COP + Set aside**) **increases** during the period 93-99 around a 18 % in relation to the cultivated surface area of the period 85-93.

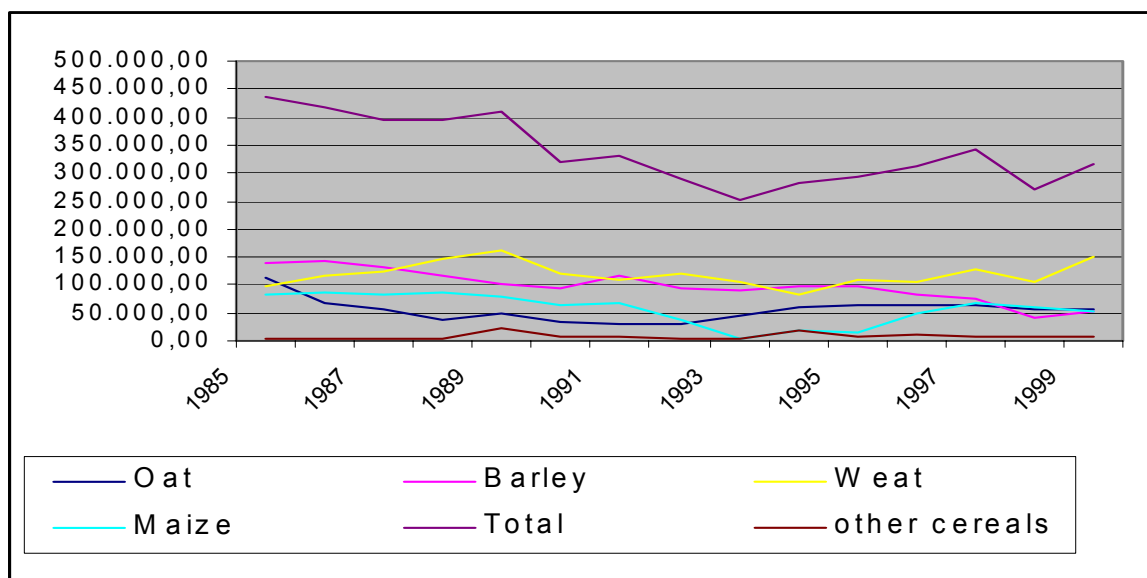
Figure 9 shows that the set aside of land policy scarcely influences in a decrease of COP surface area, and that during the period 93-99 land is recovered to locate the set aside surface area.

The distribution of COP surface by crop groups is as follows:

- **Cereals** surface area represents a 70 % of COP surface area during the period 93-99. The minimum cereal surface area corresponds with one of the year 1993 due to an increase of sunflower surface area.
- The surface area of **oil seeds** is the highest in 1993 representing almost a 30 % of COP surface area and descending along the period until reaching a 20 % during the last year. The increasing of 1993 is due to the appeal shown by the financial aids for sunflower.
- The protein seed surface area represents a 1 % of COP surface area in the period 85-93 and a 2 % during the period 93-99.
- **The set aside surface area represents a 19 % of the total (COP + Set aside)** in the period 93-99 while the cultivated surface area scarcely decreases with respect to the surface area expected as the previous period trend line indicates.

### Evolution and distribution of COP surface area by species.

Figure 10 Evolution of cereal surface area by species

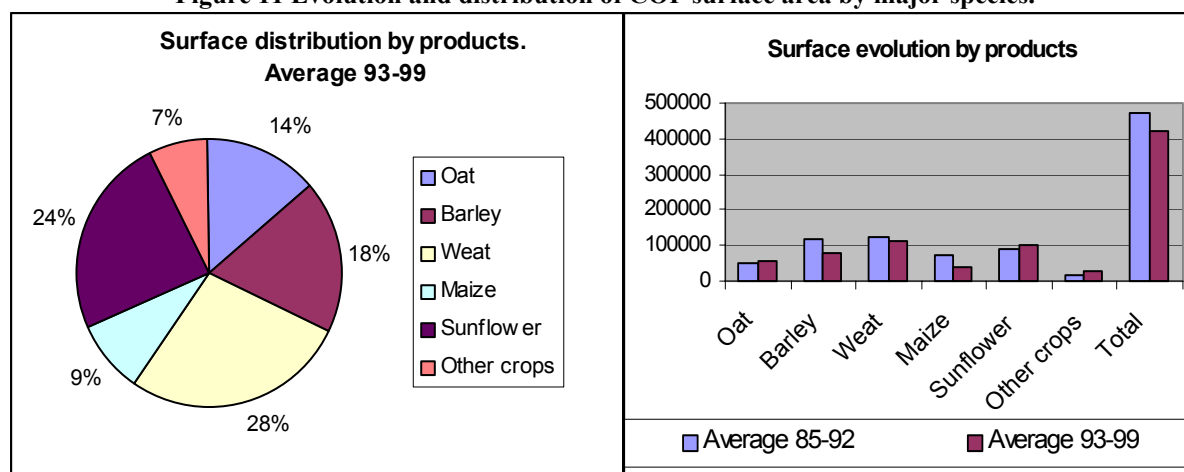


Source: MAPA

- As shown in Figure 10 there is not a major cereal specie
- Sunflower occupies an 88 % of oil seed surface area during the period 93-99

**Globally** five species (wheat, sunflower, barley, oats and maize) represent a 93 % of COP surface area. Barley, rye and maize decrease their surface area when the implementation of set aside of land policy. Sunflower, rye and other cereals increase.

Figure 11 Evolution and distribution of COP surface area by major species.

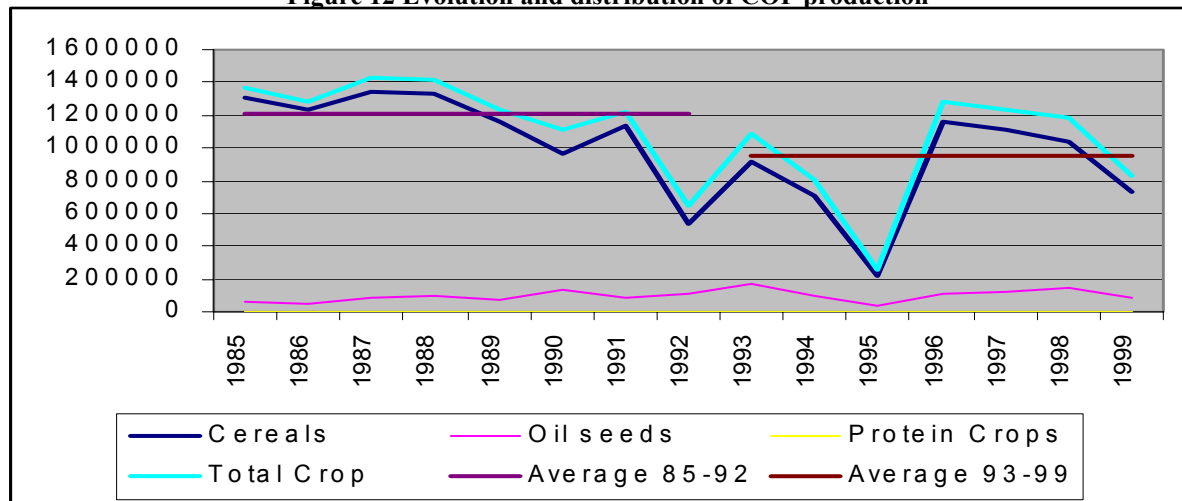


Source. Data taken from MAPA

### Evolution and distribution of COP production

COP production during the period 93-99 decreases in a 21 % with respect to the COP production of the previous period. COP production decreases almost twice than COP surface as a result of a drop of yields that decrease approximately a 10 %, from 2'55 t/ha. to 2'28 t/ha. This decrease in yield is mainly due to the particularly catastrophic yields registered during 1995.

**Figure 12 Evolution and distribution of COP production**



*Source: Data taken from MAPA.*

To estimate the production that would exist in case of absence of set aside of land policy; we may do the following:

- The area appeared below the trend line of cultivated surface area for the period 85-92 and above total COP 93-99 as shown in Figure 9 (a total of 128.000 has approx.) would be non-marginal land and would have average yields equivalent to the rest of cultivated surface area (2'28 t/ha).
- The surface area above the trend line and below total COP + Set-Aside land (a total of 560.000 has. approx. we assume that it corresponds to marginal land and it would have minimum yields. (1'2 t/ha)

$$Pr = (128.000 \times 2'28) + (560000 \times 1'2) = 963840 \text{ t. Approx. } 138.000 \text{ t by period.}$$

According to these estimations, as a result of the set aside of land the total production is reduced in a 12'6 % with respect to the production that would have been expected in absence of the measure, while the set aside area represents a 19 % of the total surface area..

The **data from the survey** regarding rotation and situation of the set aside are:

- a 72 % of them perform rotational set aside
- a 12 % perform fixed set aside
- a 17 % rotate part of the set aside and fix the other part.

Only a 28 % situate part of the set aside in small, extended, not very rich or non-watered, sloped, or rarely cultivated plots along water courses. It is important to note that the set aside is free, rotational or fixed set aside does not indicate an acquired commitment but a decision of the producer to rotate set aside or to set it always in the same holdings.

The analysis of data regarding evolution of surface areas indicates that a significant part of the set aside is located in marginal lands (above the 95 %). This does not correspond to the outcoming of surveys where only a 28 % locate the set aside in marginal plots. This is because the concept of marginality is wider than the one expected with the survey: a land may be marginal due to other reasons, e.g. for being located far away from the holding or having difficult road access. Also, a farm can be marginal for not having much technology or for having inadequate infrastructure

**Managers** surveyed say that the decrease of production is not a result of set aside but depends on other factors.

***Particular contribution to the reduction of production of surplus cereals***

The following table shows the average total production of each cultivation group for both periods and the variation percentage.

**Table 11 Average cop production by groups of crops**

	Cereals (tn)	Oilseeds (tn)	Protein crops (tn)	Total COP
Average 85-92	373862,5	94121,25	5761,375	473745,1
Average 93-99	295359,1	115503,7	8303	419165,9
%	- 21%	23 %	44 %	- 12 %

*Source: MAPA, FEGA*

The reduction of surplus cereal production is around a 21% with respect to the production in the reference period, i.e., a reduction bigger than the one observed in the total of COP crops. This is due to the fact that other COP crops, especially sunflower, substitute a significant part of cereal surface. This change in the distribution of crops is caused by the compensatory payment policy but it is not influenced by set aside.

**3.2. Question 4.1.2:**

**In what proportions has the remuneration of the voluntary set-aside strengthened the effectiveness of the set-aside instrument? Estimate the share of the voluntary set-aside areas that would have been unproductive in the event of absence of the measure.**

The estimation of set aside surface areas non-productive in absence of the measure will be done under two assumptions: in absence of the set aside of land measure and in absence of compensatory payments policy and continuation of the previous system.

• **Synthetic answer**

*We can estimate that the proportion in which voluntary set aside payment reinforces the instrument of set aside of land is smaller than the proportion which affects its surface area (44%) due to the voluntary set aside is distributed spatially in less productive holdings.*

*In absence of this measure, the whole surface area will be sowed to get all compensatory payments.*

*In absence of compensatory payment policy and continuation of the previous system, we can estimate that the total set aside of land (compulsory and voluntary) would be non-productive and there will exist a non-productive additional surface area equivalent to 53.000 has. by period.*

• **Detail of answer**

***The proportion of voluntary set aside which reinforces set aside of land is:***

$$S = S_v / (S_v + S_o) = 299251 / (299251 + 388954) * 100 = 44 \%$$

The **outcomes of the survey** regarding the voluntary set aside performance are:

- A 88 % of surveyed performed voluntary set aside and a 53 % declare that the maximum rate of voluntary set aside has impeded them to set aside more than what they would like to.



The reasons for performing voluntary set aside given were:

- Preventive measures for not to have penalties in case of being under the maximum set aside rate: 47 %
- Economic reasons (payments for the best set aside in relation with the crop): 51 %
- Reduction of the on-going activity: 51 %
- Chance to enlarge the lifetime of the machine: 25 %

The specific climatological conditions of this last period have difficult the sowing of winter cereals, fact that have caused an increase of set aside. We estimate that, being this a very recent fact, it is the cause of that the 50% of farmers declare to perform voluntary set aside to reduce the on-going activity.

Farmers do not distinguish between voluntary and compulsory set aside when locating it in the fields. Nevertheless, we can estimate that the proportion in which voluntary set aside reinforces the instrument of set aside is smaller than the proportion of its surface area, if we consider that in some cases compulsory set aside is located in more productive lands than the voluntary one, due to the fact that the holdings that only perform compulsory set aside are the better producer lands.

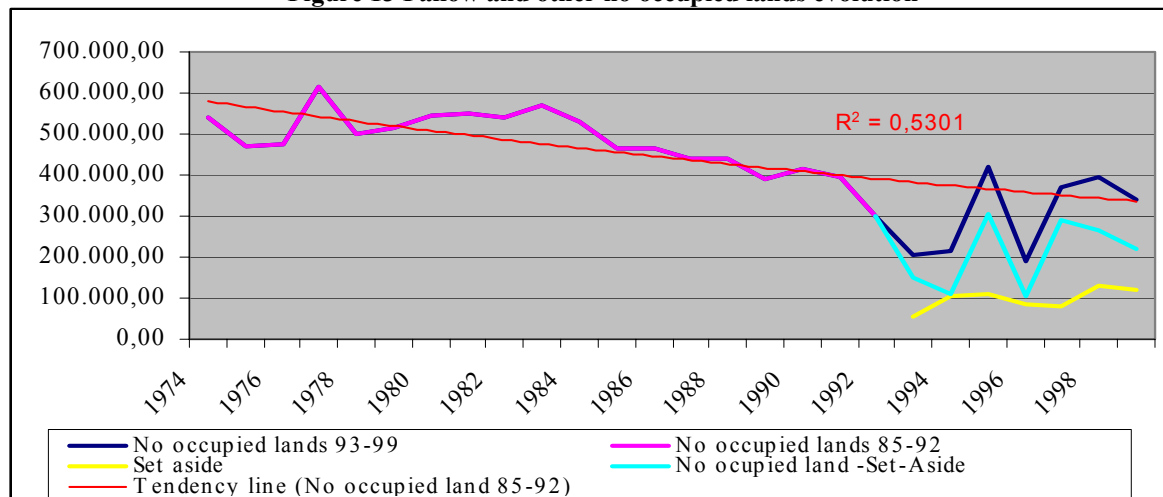
***The share of the voluntary set-aside areas that would have been unproductive in the event of absence of the measure.***

As shown before, marginal land is recovered and the set aside is located there. In opinion of all people asked, if the possibility of set aside a part of the surface area would not exist, the land would be recovered anyway and sown to get the compensatory payments. This happened in 1993 where most of sunflower seeds were sown in marginal land and the increase of surface area does not correspond with an increase of production. See Figure 9 and Figure 13

If compensatory payments policy does not exist and the system of previous period is still on going there will be non-productive land. To estimate the surface area of set aside that would be non-productive we have to look at the trend followed by total fallow land and other lands not used during the last period and compare them with the period of implementation of set aside of land. Statistical data do not include categories separated from abandoned lands and include temporarily out-of-use land as well as fallow surface lands.

Figure 9 shows that COP land decreases during the period 85-92. Furthermore the area of non-irrigated arable land declined by some 450,000 ha between 1974 and 1992, the majority reverting to permanent pasture or rough grazing. As a result of the abandonment of much of the most marginal land, and an increase in fertiliser use, the proportion of fallow land declined from 86 % of all arable land in 1974 to 64 % in 1992. (Beaufoty, 1995)

**Figure 13 Fallow and other no occupied lands evolution**



*Source: Data taken from MAPA and FEGA*

In fact, Figure 13 shows that no occupied lands have an important decreasing tendency. But after 1993 there is big fluctuations in no occupied lands that we hardly can explain. The first year the surface decline some by 50,000 has. That can be explain because some no occupied lands have reverted to gracing land as a direct result of the CAP support regimes concerning cattle. One indicator is that cattle are reported to have increased significantly. (Baufoy, 1995).

There is also significant amounts of land planted with trees under Regulation 2080/92 (16,000 ha in the period 1993-1994). But we can explain the recovering of 200,000 ha in 1995 and the fluctuations that follow.

Analysing the information given by Figure 13 we can conclude that if the policy previous to the reform of 1993 continues, the whole set aside land will remain non-productive. There would be even an additional non-cultivated surface area equivalent to approximately 370.000 has. as deduced from the graphic (difference between dark blue line and red line), about 53.000 has. by period.

We can not say that a part of traditional agronomic fallow is computing as set aside of land, because there are some traditional fallow indexes of compulsory fulfilment.

Nevertheless this estimation is under different **limitations**:

- The fallow data and other unused lands (pink line), and fallow and other unused lands + set aside (dark blue line) came from the same historical series in the yearbook of Ministerio de Agricultura Pesca y Alimentación. It had some methodological changes when obtaining the data, precisely during the years when the 1992 reform came into force.
- The set aside of land data (yellow line) came from declarations of crops presented to the payer organisms, so this source is different from the fallow data, although both are official data.

### **3.3. Question 4.1.3:**

#### **To what extent was the set-aside instrument determining in the no-food crop production trend?**

The existing data and the opinion of experts confirm that the production of non-food crops was almost non-existent until the beginning of the set aside policy.

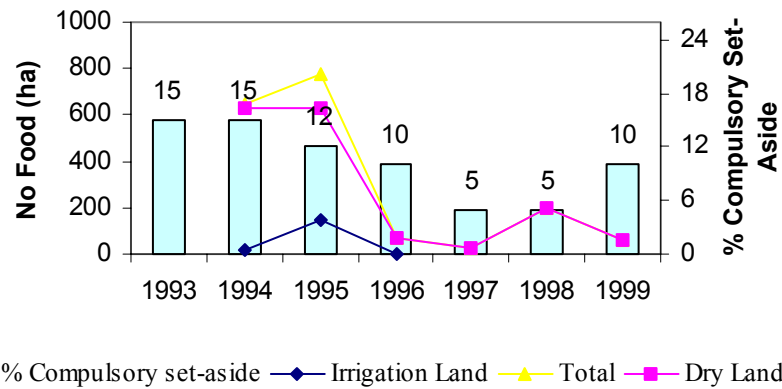
The instrument of the measure of set aside land was not determinant in the development of non-food crop cultivation due to the fact that this development does not exist because it occupies a minimum surface area. It does not reach a one per cent in the period of highest incidence and it tends to disappear. In the last period, only 11 farmers have it, giving only 59 has. (0'05 % of set aside surface area).

**Table 12 Percentage of no food production at set aside land. Extremadura**

	1993	1994	1995	1996	1997	1998	1999
<b>Total Set Aside</b>	55161	104424	110770	86222	81263	129531	120834
<b>Total No Food</b>		643	773	73	30	196	59
<b>%</b>	0,00%	0,62%	0,70%	0,08%	0,04%	0,15%	0,05%

*Source: Data taken from MAPA and FEGA*

**Figure 14 Evolution of no food surface compared compulsory set aside rate**



*Source: Data taken from MAPA and FEGA.*

### ***Survey data***

The reasons given by producers for not to perform set aside with non-food crops are the following::

- Not profitable : 44 %
- So many contractual requirements: 31 %
- Others (ignorance, lack of time, not having industry in the region, cattle use of set aside lands, limited market): 50 %

One of the producers asked have performed set aside with non-food crops. The reason given was agronomic interest in rotation.

#### **4. ANSWER TO QUESTIONS 422 TO 434**

There is a double criterion to answer these questions.

In one hand, we used the set of indicators used to answer the previous questions, as well as the conclusions, to establish the practical impact of the implementation of set aside of land on surface areas and productions.

Also, we have made other specific indicators regarding to yields of crops and market conditions. To make this we took a reference period previous to the implementation of the set aside of land.

In the other hand, we have analysed the behaviour of farmers and the opinion of managers and experts was required. This second element has more significance in this second set of questions than in the other, because we have evaluated in a direct way the criteria followed by farmers of this region for the set aside implementation. The surveys to managers and experts were used as a validation element for the surveys to farmers, to use them as generalised of the whole region.

Finally, the analysis of information shown by the answer is summarised in a synthetic answer following every question..

- **Limits**

The sample size for the area where surveys were performed is very small and is not representative enough. Also the farmers can give their opinions with the intention of giving the image of being good producers.

So it is important to compare the outcomes of the analysis with the global image of managers and regional experts.

#### **4.1. Question 4.2.2:**

**Is the impact of the compulsory set-aside rate and of the payment level on the large producer's income likely to amend their crop choice so as to answer better the requests of the market? This question will be analysed at the level of the selected production regions for the question 411. The consultant will carry out then a synthesis at the Community level of the main conclusions.**

- **Synthetic answer**

*The set aside rates and its payment had a moderate impact in the crop rotations in the region because a 41% of farmers admit to have performed modifications in their choices.*

*A 75% of surveyed farmers declare that they have maintained their incomes, and a 84% of them consider this system as profitable. The percentage is bigger in case of great producers, who consider the current system as profitable in a 95% of cases, while only a 59% of small ones is satisfied. It is observed that the effect of set aside on incomes is greater in case of big producers. The agroenvironmental conditions of Extremadura limit the options of diversification of crops. The greater part of the modifications resulted from the set aside have meant some substitutions between different COP products.*

*The adaptations experienced by the alternatives are not due to the lack of productive area as a result of the set aside, but they are directed by the set of PAC effects on the markets and the income of producers.*

- **Method**

The evolution of the surfaces of the different crops along the periods 85-92 and 93-99, (see Figure 9 and Figure 10), states the global effect of the possible modifications experienced by the individual crop alternatives of producers. These surveys were used to estimate how much these estimations are influenced by the implementation of set aside or other reasons.

The claims of the market are estimated across the evolution of prices for the main COP products along this period. The other elements that influence the determination of crop rotation must be established to differentiate the effects of set aside of land.

- **Detail of answer**

The average yields of the area selected in Extremadura are 1.9 t./ha. for dry land and 5.3 t./ha.. for irrigated land. Given these values, the limit to be considered great producer is 48 ha. of dry land or 17 of irrigated land. Classifying like this, more than the 80% of the area taken into account are a part of big holdings, so we can assume that the behaviour of the variables at regional level is representative of the reality of big holdings.

***Income of holdings***

Among the farmers surveyed, the 22 % affirm having a decrease in their global income due to PAC, while a 75 % did not have a decrease in their incomes.

Regarding the payment of set aside, a 81 % note that it meets the function of helping the maintenance of incomes and the 50 % also say that these subventions are directed to afford maintenance costs of set aside plots, without being remarked by other functions.

Most of surveyed farmers (88%) agreed to be conscious of set aside maintenance costs. **The average set aside maintenance cost declared by surveyed producers is 99 €, below the amount of aids to these surface areas, being the average cost by hectare in Extremadura 111.5 € (dry land) and 311.1 € (irrigation land).** The data obtained show that aids compensate the maintenance costs of set aside plots, and also give a compensation margin of the loss of income due to non-cultivation of set aside areas. But this margin is very small in case of dry land holdings.

A 51 % of surveyed farmers refer to economical reasons to perform voluntary set aside, and the other half refer to on-going activity reduction. A 25% intend with this to enlarge the life span of the material and an 18% perform voluntary set aside because of climatological reasons.

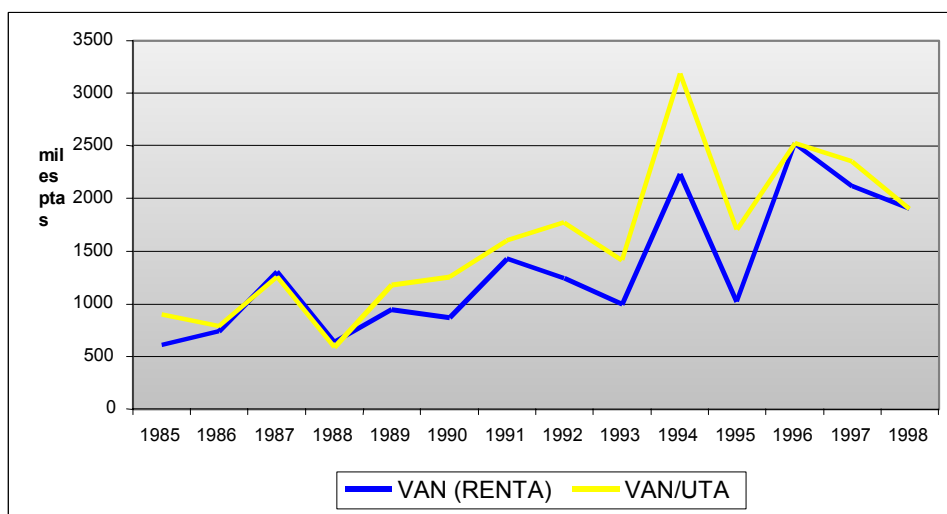
On the other hand, a 53% of the total would like to exceed the maximum set aside limit. We can go as far as to say that set aside is considered a profitable activity in this 53% and that the remaining 47% are influenced by other economical reasons as well as the income rate produced between set aside and crop.

We have to note that an 88% of surveyed farmers do perform voluntary set aside regularly, because they consider it as profitable. All these factors drive us to conclude that the set aside has not a negative impact on the incomes of holdings, due to the fact that the natural trend is to use it, and **in most of cases (53%) it is considered as a clearly positive activity.**

The impact of set aside is more sensitive in the case of big producers, who consider the current system as profitable in a 95% of cases, faced to a 59% in small producers. These percentages coincide with

the fact that only a 22% of surveyed farmers declare to have decreased their incomes. The following graph (Figure 15) shows agrarian income evolution in Extremadura:

**Figure 15 Agrarian income evolution (VAN) and income by agrarian work unit (VAN/UTA)**



*Source: Data taken from MAPA*

The beginning of PAC implementation and set aside of lands mean an inflexion point in the evolution of agricultural average yield evolution in Extremadura. Gross growth trend of income increases and the average income also increases as a result of the implementation of new measures.

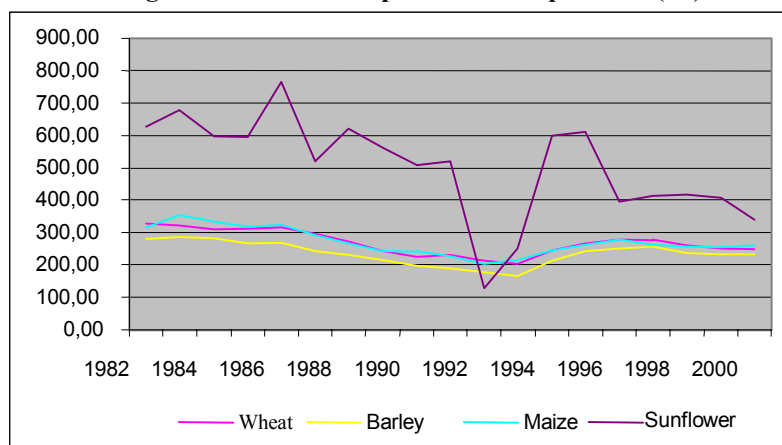
The evolution of incomes is closely related to the market conditions. As seen in Figure 16, the price of products does not decrease as much as it would be expected, due to the fact that the national productions are low. So, the first half of the period taken into account is formed by very profitable years for COP producer in the region.

#### ***Cultivation choices and market claims***

The 41% of surveyed farmers agreed that they have performed changes in the crop choices to maintain their yields. As shown in Figure 9, the implementation of set aside causes a decrease of cereals surface area.

These modifications are not only due to a reduction of crop surface area derived from the compulsory set aside, but for a search for efficiency of crops to face market claims. These claims are established in Figure 16 as the addition of aids plus market price received by the farmer.

**Figure 16 Current sell prices of COP plus aids (€/t) .**



*Source: Data taken from INE*

Market conditions in the period 92-99 are not less unfavourable than in the period 85-99, but, except oil seeds, it maintain previous period mean.

Market conditions are better than the periods immediately previous to PAC implementation but not with respect to the years before.

A 95% of farmers consider set aside as something essential, but they also consider that as a unavoidable condition to have access to the rest of PAC aids. **Most of producers do not consider as significant the impact of set aside on the yields, but consider the PAC effects globally.**

On the other hand, we can not establish a direct relation between set aside of land and the transformations performed in crop rotations, due to the fact that the **agricultural production in Extremadura is mainly determined by environmental limitations (Dry climate and poor land)**. Also, the set aside did not make significant changes in crops because farmers were performing traditional fallow and they were used to these practices.

#### ***Relation with surplus productions***

Regarding the modifications made in the crop rotations, the majority of them were made in COP crops. As derived from the data of the following table, net variation of COP activity in the choices is 12%. Also we have noted a net increase of non-COP crops in a 33% and of other activities different from agriculture in a 17%.

There is a clear trend of re-balance going through an **enhancement of the significance relations among COP crops**, according to the functions of each one, as well as a slower **diversification trend, through the implementation of new non-COP crops**, and the development of other non-agricultural activities.

**Table 13 Percentage of activity variation at surveyed holdings due to set aside**

	<b>Variation of activity</b>	<b>Developed activities</b>	<b>Reduced activities</b>
<b>COP crops</b>	12 %	87 %	75 %
<b>Non-COP crops</b>	33 %	33 %	0 %
<b>Other activities</b>	17 %	25 %	8 %

*Source: Data taken from surveys to producers*

Regarding the main criteria based on what the rotation of crops is planned (see graph), we can note that the main trend is profitability, minimising the risk factor due to this reason. This is why crops under subvention represent the main choice for the production in extensive holdings of Extremadura, which means a guaranteed minimum income.

**Table 14 Base criteria to manage surveyed holdings**

<b>Main criterion</b>	<b>Agronomic</b>	<b>Profitability</b>	<b>Easiness</b>	<b>Environment</b>
	10 %	87 %	3 %	0 %

*Source: Data taken from surveys to producers*

#### **4.2. Question 4.3.1:**

**Did the existence of a remunerated set-aside encourage good crop rotation and which were the alternative crops in the plots where a set-aside was established?**

- **Synthetic answer**

*Voluntary paid set aside had a very poor effect over the evolution of crop choices in the region. We may consider that it favoured crop rotation in a 12,5 % of holdings surveyed, and in a 76% the effect was neutral, being negative in a 12,5% of cases only. There is an increase in the choices for diversification of alternative out from COP production.*

*A 88% of farmers rotate the total or part of their set aside plots regularly.*

*Non-food cultivation of set aside has very few scope (3% of surveyed farmers), so the effect of set aside on rotations have not decreased.*

*Voluntary paid set aside inserts an element of flexibility and security into the profitability of the holdings of the region, with edaphoclimatological limitations that will affect the crop rotations. So a 88% of farmers perform voluntary set aside currently.*

*Set aside of land did not remove any crop of the choices, so it had not negative effects.*

- **Detail of answer**

The existence of set aside lands, both voluntary and compulsory, and the current laws on the management of them, has increased the performance of some cultural works as well as developing new ones.

Set aside did take part in the traditional crop choices generating a rebalance between surfaces and cultural practices.

The payment of set aside has included a new economic factor, lacked from the traditional practice, that influenced the rebalance of the new choices.

As shown in Figure 13 the fallow surface in Extremadura has a continuous downward trend, as well as that by means of the effect of set aside measures, this decrease is not stopped. Therefore in absence of the set aside of land measure, there would exist a non-cultivated surface area that is cultivated nowadays.

The practice of fallow has had a basic significance on crop rotations before 1992 in all Extremadura. In driest areas it was an essential element for cereal production, and in the ones with biggest yields it meant a current performance, but with less superficial scope.

An 84% of farmers surveyed have performed fallow before the implementation of compulsory set aside, with an average surface of 39 ha. equivalent to the 24% of the average useful agricultural surface. Fallow is generally performed in a rotational way (84% of surveyed farmers), with a trend to concentrate it in the worst lands (12%). It is noted that Extremadura is an area where cultivation conditions for cereal production and COP in general, require the performance of fallow in a regular way.

The fact that fallow is a customary task in most of the holdings taken into account, corresponds with the fact that a **91% of surveyed farmers had not have problems** at the beginning **with the management of set aside of land**, and that this percentage keeps currently in a 78%. With the implementation of PAC, the number of holdings where the management of set aside was a difficulty has increased in a 13%. The tradition of fallow management in the regions did not mean enough guarantee for the proper management of set aside.

With the implementation of paid set aside, an **88% producers asked have always practised voluntary set aside**. Among the reasons given we can highlight that in a 47% it is due to a precaution measure to guarantee the fulfilment of the subvention standards in force. Moreover, they argued direct



economical reasons (51%), or indirect, as for reduction of activity (51%), continuation of the life span of machinery and its better amortisation (25%), or other reasons, as climatological (19%).

The criteria followed for the study of the influence of set aside in crop rotations of surveyed producers are the following:

**Table 15 Matrix to analyse the effect of set aside in the rotation system**

Type of effect of set aside in the rotation system	Rotation disfavoured by set aside	Neutral effect of set aside on the rotation	Rotation favoured by set aside
Cross-sections of cultivation practices regarding rotation system that allows for a classification (to be validated by interviewer according to the features of the region)	<ul style="list-style-type: none"> <li>High percentage of fixed set aside</li> <li>Protrude of a crop from the rotation as a result of set aside</li> <li>Increase of single crop farming trend</li> <li>Not sowing of plants that enhance fertility (e.g. Leguminous plants in set aside)</li> </ul>	<ul style="list-style-type: none"> <li>Continue with the same crops and rotations before and after set aside</li> <li>Cultivation of set aside lands with the same species but devoted to non-food cultivation</li> </ul>	<ul style="list-style-type: none"> <li>Mainly rotational set aside</li> <li>Use of set aside with vegetable cover to enhance fertility</li> <li>Cultivation of set aside with new species (for production or not)</li> </ul>

*Source: Self made criteria regarding main regional features*

The classification obtained from this analysis matrix reveals an effect of set aside which is mostly non-unfavourable about an adequate rotation:

**Table 16 Effect of set aside on crop rotation**

Type of effect taken into account	Rotation disfavoured by set aside	Neutral effect of set aside on the rotation	Rotation favoured by set aside
Classification of holdings according prevalent practices	12 %	76 %	12 %

*Source: Data taken from surveys to producers.*

Most of the surveys performed have shown that set aside did not displace minor crops of the choices, but powered them, having most of areas of more extensive cultivation. Figure 9 and Figure 10 indicate how set aside surface area is got in detriment to barley, major COP crop. In addition to the increase of set aside, and the agronomic benefits it has for the land and crop, the production of other minor and more demanding COP crops on water conditions and land is increasing, as wheat, and, in a lesser way, protein seeds.

These conclusions are reinforced by the fact that a 88% of farmers rotate the total or part of their set aside plots:

**Table 17 Percentage of set aside rotation at surveyed holdings**

Type rotation of set aside	100% rotational set aside	Mixed rotation of set aside	100 % fixed rotation
Classification of holdings according to the rotation of set aside	72 %	12 %	16 %

*Source: Data taken from surveys to producers.*

The modifications of crop choices are done in the same quantity as in COP crops as in non-COP crops, 58%. As the previous answer indicates, in COP crops most of modifications are substitutions of COP crops by other COP crop, while in non-COP crops the modifications performed were development of the choices.

Non-food cultivation of set aside does not promote rotation, because barley is the crop most cultivated, so it tends to single crop farming. But it has a poor scope. Only a 3% of surveyed farmers have practised non-food cultivation of set aside, in a 100% of their set aside surface area.

#### 4.3. Question 4.3.2:

**Did the location of the plots set-aside in use encourage better cultivation methods?**

- Synthetic answer**

*We can not establish a direct relation between the location of set aside plots and the evolution of cultural techniques, but we can affirm that it have contributed to consolidate and recuperate a series of good traditional cultural practices.*

*Also we can say that globally, set aside of land has had a positive agronomic effect in a 54% of surveyed holdings.*

*Set aside plots are rotated if they do not mean a complication added to cultural labours, in these cases the trend is to remain it fixed.*

*Fixed set aside is used to optimise the management of holdings performing it in these plots where cultivation is not profitable for the holding.*

*With the set aside of land fallow is revaluated in crop rotation, as well as the specialisation in the different techniques of management.*

*When favourable conditions, they tend to locate set aside plots in areas less adequate to use by the holding, which have contributed to increase the global efficiency of cultural practices.*

- Detail of answer**

The payment of set aside, as well as the compulsory feature of it, have included new judgement elements when deciding the location of set aside plots, that were not significant for the decision of traditional fallow.

In a context of compulsory set aside, the benefits derived from this new situation tend to be maximised instead of minimise the losses caused with respect to the previous period.

Starting from the reality of land, where fallow practice was usual before 1992, due to the fact that a 84% of farmers performed fallow customarily, the locations chosen for set aside plots are the following:

**Table 18 Location of set aside lands at surveyed holdings**

Option		%
<b><i>Rotational set aside</i></b>	Use of rotational set aside	<b>84%</b>
<b><i>Fixed or voluntary set aside</i></b>	Location of set aside along water courses	<b>3%</b>
	Location of set aside in very small plots	<b>3%</b>
	Location of set aside in little rich or non-watered plots	<b>12%</b>
	Location of set aside in plots far away from the holding	<b>9%</b>
	Location of set aside in sloped plots	<b>6%</b>
	Location of set aside in less cultivated plots	<b>6%</b>

*Source: Data taken from surveys to producers.*

Absolutely, a 92,5 % of surface area of the region is rotated regularly. By holdings, a 72% practises only rotational set aside, a 16% performs both rotational set aside and fixed set aside, and a 12% remaining holdings does not rotate the set aside. Generally, the trend is to use set aside as traditional fallow, to make the best of its agronomic crops for the following crop.

This practice is made at the same time as fixed set aside, so set aside is also used as an optimiser of holdings, taking out from the crops the less efficient surface areas. To evaluate the agronomic effect of set aside of land, we have analysed the information taken from the surveys according to the degree of fulfilment of the following criteria:

**Table 19 Main criteria to evaluate the agronomic effect of set aside of land**

<b>Positive agronomic effects</b>	<b>Negative agronomic effects</b>
- Increase of average yield of holding.	- Abandonment of rich soils.
- Benefits for cultivation of next crop.	- Fragmentation of crop units

*Source: Self made criteria regarding main regional features*

The classification obtained according to the degree of fulfilment of the criteria reveals a positive effect of set aside according to agronomic practices and in a fourth part of the cases it is considered as neutral:

**Table 20 Agronomic effects of set aside on surveyed holdings**

<b>Type of effect taken into account</b>	<b>Positive agronomic effect</b>	<b>Neutral agronomic effect</b>	<b>Negative agronomic effect</b>
<b>Classification of holdings according to agronomic effect of set aside</b>	53 %	25 %	22 %

*Source: Data taken from surveys to producers.*

Also, we consider as positive the effect of rotation of set aside (Table 17). There is a double trend: on one side the trend is to maximise the agronomic benefit of rotation of set aside, but on the other, it is used in a fixed way, as to optimise the surface of holdings.

It is noted how set aside is rotated if this does not mean a complication of cultural labours of holding.

To evaluate the economic effect of set aside of land, we have analysed the information taken from the surveys according to the degree of fulfilment of the following criteria:

**Table 21 Main criteria to evaluate the economic effect of set aside of land**

<b>Positive economic effects</b>	<b>Negative economic effects</b>
- Increase of productiveness of the next crop	- Abandonment of rich agronomic soils.
- Increase of average yield of holding.	- Fragmentation of crop management units.

*Source: Self made criteria regarding main regional features*

The classification obtained according to the degree of fulfilment of the criteria by surveyed farmers, reveals a not negative effect of set aside according to economic results of holdings.

**Table 22 Economic effects of set aside on surveyed holdings**

<b>Type of effect taken into account</b>	<b>Positive economic effect</b>	<b>Neutral economic effect</b>	<b>Negative economic effect</b>
<b>Classification of holdings according to economic effect of set aside</b>	54 %	25 %	21 %

*Source: Data taken from surveys to producers.*

#### **4.4. Question 4.3.3:**

**Did the existence of the remunerated compulsory set-aside cause production intensification in the other plots?**

- **Synthetic answer**

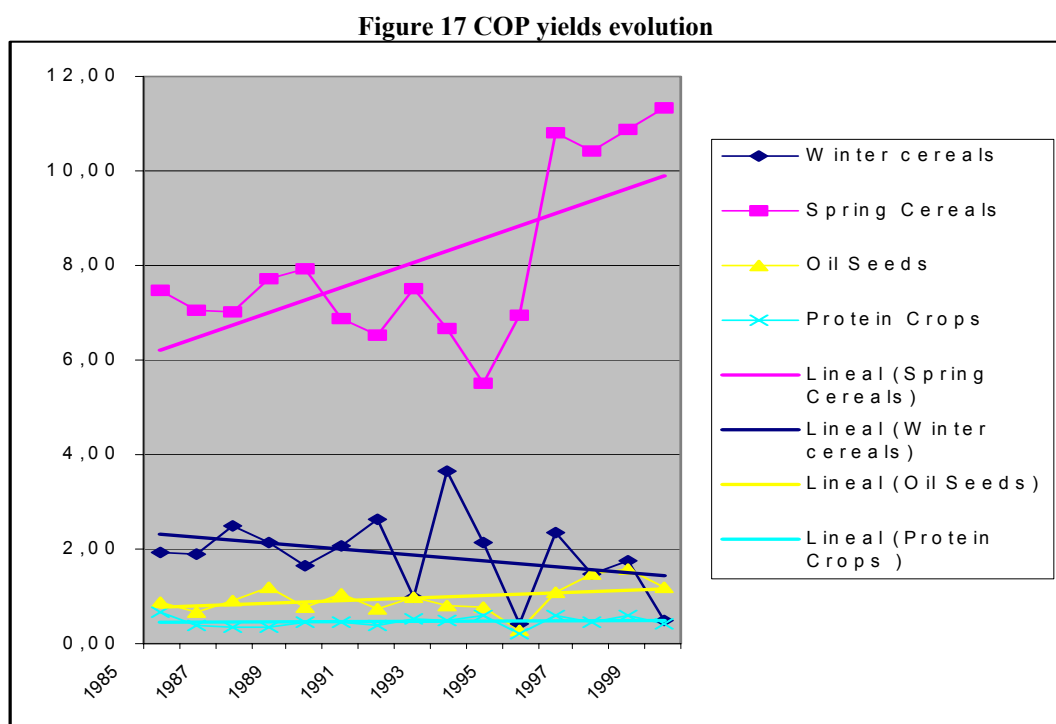
*The average yield of cereal decreases during the period of implementation of set aside of land.*

*The study deducts that the behaviour of yields in the period 93-99 is conditioned by climatological conditions having the farmers performance any influence at all, despite a 63 % of surveyed farmers declare that they have tried to increase yields, and a 38 % declare that they have decreased the costs*

- **Detail of answer**

The observation of the evolution of average yields makes us possible to infer if they vary differently within the period 93-99 than during the period 85-92. The surveys to farmers and managers were used to estimate how this difference is influenced by the set aside of land implementation or other causes.

Figure 17 shows the evolution of winter cereal yields (not including maize), spring cereal (maize) oil seeds and protein crops in the period 85-99.



Source: Data taken from MAPA

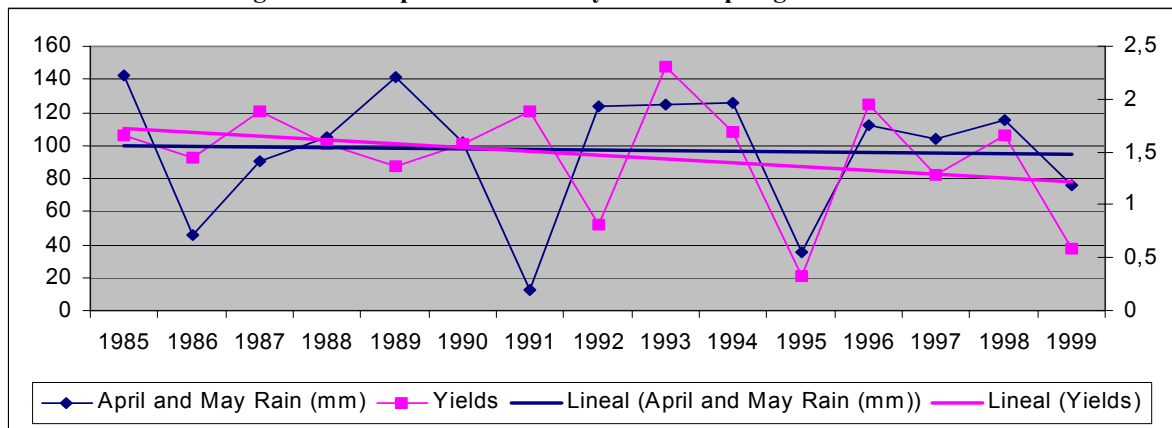
Maize yields increase due to the huge increase of the last four periods, where the yields were doubled with respect to the previous period. In the period 85- 95 the yield of maize was also decreasing. In the period 85-99, winter cereal yields decrease, oil seed yield increases and protein crop yield remains constant.

Weather has an influence in yields which depend on quantitative and quality of rain, temperature , frosts, etc. The main influence of weather in yields is observed when comparing spring rain (April and May) with yields, according with agricultural engineers experts in Climatology consulted<sup>4</sup>.

<sup>4</sup> VID Annex 4 managers and experts consulted

Figure 18 compares April and May rain and yields. A big parallelism between them is observed during the period 93-99. On the contrary during the period 88-92 the behaviour of yields is opposite to the quantity of spring rain. This may be due to other reasons climatic and no climatic. Nevertheless it is observed that yields have a decreasing trend along the whole period which does not correspond with an equal decrease of rain.

**Figure 18 Comparison between yields and spring rain . 1985-1999**



*Source: Data taken from MAPA e INE*

Cereals, being the major crop, indicate the global trend of Cop crops. The evolution of yield in winter cereals is compared using a reference period. To analyse if the yields are influenced by reasons different from technological development and climate, the reference period must be long enough to correct climate effects. Table 23 details the optimum period of years that the data series to perform climate studios must have, according to the World Meteorological Organisation. Following the W.M.O. guidelines, and to correct climatic effects affecting the evolution of yield, a reference period of forty years is taken. Within this period happened drought years, and years of much water, due to the fact that climatic incidences are cyclic.

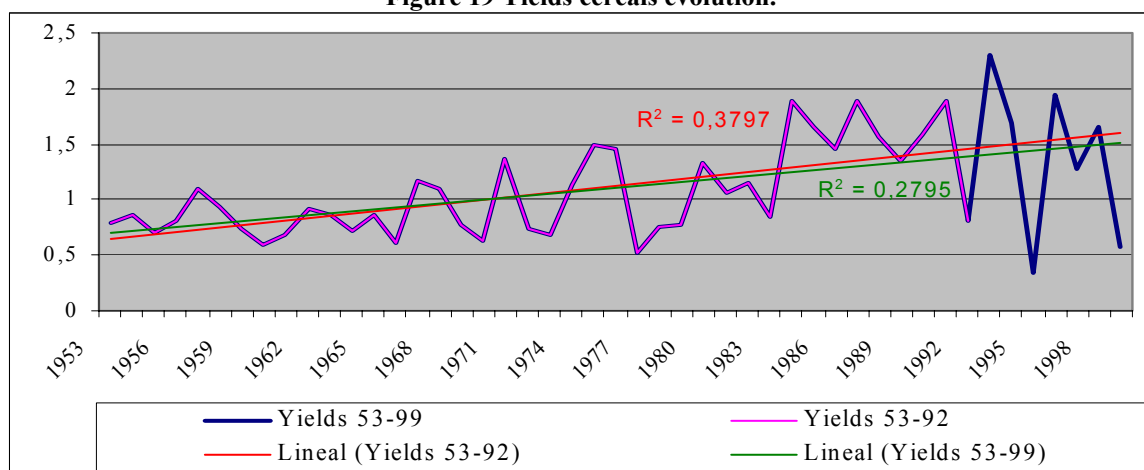
**Table 23 Optimum period of years to perform climate studios (W.M.O)**

ELEMENT	ISLANDS	COASTS	PLAINS	MOUNTAINS
Temperatures	10	15	<b>15</b>	25
Humidity	3	6	<b>5</b>	10
Cloudiness	4	4	<b>8</b>	12
Rainfall	25	30	<b>40</b>	50

*Source: Landsberg and Jacobs, 1951*

Figure 19, shows the evolution of cereal yields and its trend. Looking at the historical evolution of yields, 40 years series (53-92), extrapolating the trend of this period to the period of implementation of set aside of land (red line) and comparing it with the trend line of the whole period (53-99) (green line), we deduced that the increase of yield is very similar of what would be expected if the condition of the previous years were maintained.

**Figure 19 Yields cereals evolution.**



Source: Data taken from MAPA

#### *Survey to farmers*

There are more farmers that affirm to have increased yields (63 % of surveyed) than farmers that declare to have decreased costs (38 % of surveyed).

#### **4.5. Question 4.3.4:**

**To what extent has the existence of the compulsory set-aside modified the farm competitiveness by an adaptation of the productive structures? (e.g. farm size, farming prices, land prices, etc.)**

- **Synthetic answer**

*Set aside and compensatory payments linked to surface area have influenced in many ways the competitiveness of cultivation holdings. Among these we may note: Price of leaseholds, size and number of holdings and land price.*

*The size of holdings increases during the period 93-97 quicker than in the period 87-93 (1 ha./year) / (0,35 ha./year). In the period 93-97 increase is due to a recovery of surface area while in the previous period the main reason is a decrease in the number of holdings. We see that, from implementation of direct payments linked to land, the cultivation of last period abandoned lands was again profitable. This influences for a decrease in leaseholds.*

*A 84 % of surveyed think that as a result of the compensatory payments a market of eligible lands is created. Nevertheless, the fact that the change of trend in land prices was after the beginning of implementation of the policy indicates that the reasons for these increase in land prices might be different from compensatory payments. Farmers and managers have pointed the Euro effect as one of these reasons.*

- **Detail of answer**

#### *Size of holdings*

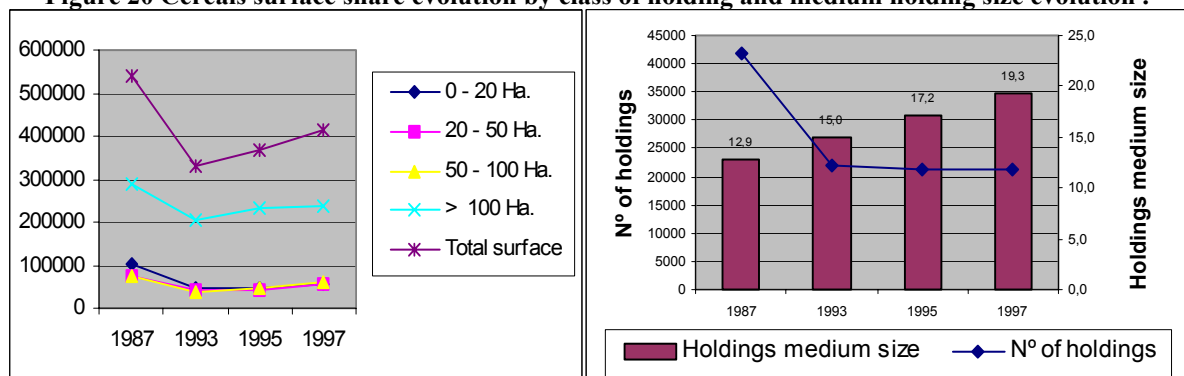
Figure 20 shows that the PAC reform influences the allocation of cereal surface area. During the period 87-93 there is a decrease in cereal surface area in all types of holdings so the total surface area decreases in a 38 %. From 1993 the surface area downward trend is reversed and the surface included in every type of holding is increased.

The **average size** of cereal holdings increases in a higher rate of growth during the period 93-97 (1 ha./year), than in the period 87-93 (0'35 ha./year)

- Although the surface area decreases during the period 87-93, the average size of holdings increase due to a bigger decrease of their number that is reduced almost in a half, decreasing a 47 %
- During the period 93-99, the increase of the average size of holdings is due to an increase of surface areas, because the number of holdings remains constant.

We see that, from implementation of direct payments linked to land, the cultivation of last period abandoned lands was again profitable.

**Figure 20 Cereals surface share evolution by class of holding and medium holding size evolution .**



Source: Data taken from INE

There is a recovering of working surface area but there is no change of surface from a holding to other, so we can conclude that the leaseholds were impeded.

### Eligible lands market

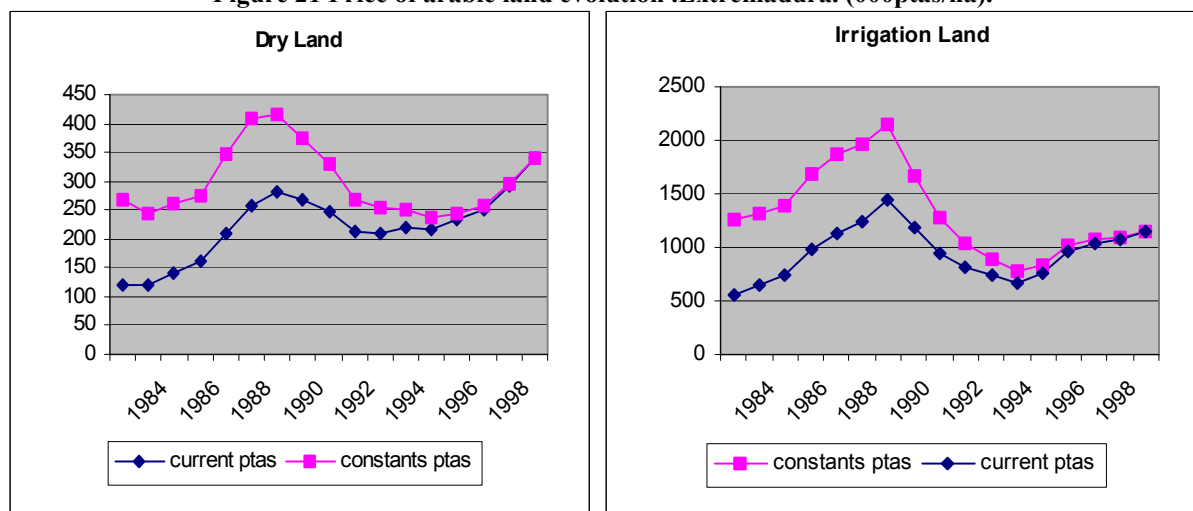
The data from the survey to farmers are the following:

- A 53 % have increased their holding during the period 87-92 , in an average rate of 21'4 has.
- A 56 % have increased their holding during the period 92-99, in an average rate of 35'7 has.
- A 38 % said that they have difficulties when purchasing or renting cultivable land from 1992, and a 19 % think that set aside of land may be one of the reasons.
- A 84 % think that there is a land market susceptible of subvention as a result of PAC reform.

The data from the *survey of land prices of MAPA* (Figure 18) show that the price of land has a downward trend until 1995 in dry land and until 1994 in irrigated land. From then on, it begins an upward trend. This is bigger in dry lands in the last two periods. But in irrigation lands the increase of land prices is bigger during 94-96. During 93-99 land price increases a 33 % in dry lands and a 30 % in irrigated lands.

The evolution of land prices may be partially influenced by compensatory payments policy. the fact that the change of trend in land prices was after the beginning of implementation of the policy indicates that the reasons for these increase in land prices might be different from compensatory payments. Farmers and managers have pointed the Euro effect as one of these reasons.

**Figure 21 Price of arable land evolution .Extremadura. (000ptas/ha).**



*Source: Data taken from MAPA e INE*

***Adaptation to set aside***

The data regarding the adaptation to set aside are the following:

- Farmer's purchase or lease to recover the previous surface area: 38 %
- Increase of yield of other lands in the holding: 63 %
- Decrease of inputs and/or cultural labours to decrease expenses: 38 %
- Rebalance or change to other more profitable crops: 53 %



## 5. ANSWER TO QUESTIONS 441 – 444 REGARDING ENVIRONMENTAL IMPACT

To answer these questions we have used a qualitative focus, due to the fact that environmental impacts are very difficult to quantify without making mistakes or vagueness. So, the behaviour of farmers surveyed is analysed, and the criteria for this analysis are supported by interviews with experts and managers<sup>5</sup>, as well as in the existing bibliography<sup>6</sup>.

### 5.1. Pregunta 4.4.1:

**Did the adoption of the set-aside have a significant impact on the improvement of the soil management (erosion, fertility, structure, etc)?**

- **Synthetic answer**

*In the surveyed area the impact of set aside is principally neutral, 72 % of cases, prevailing negative impact (19 %) over the positive ( 9%).*

*At regional level we estimate that the impact is more negative than positive, due to the fact that total fallow have decreased and is established in marginal land and it makes that in areas where negative effects of fallow on soil erosion were bigger than the positive effects on its fertility.*

The **data of the survey** regarding the type of set aside lands covert are. bare set aside: 87 %; spontaneous vegetation: 38 %.

Regarding the problems for maintenance of set aside plots, a 22 % declare to have or had problems. E.g.: weed control: 86%; erosion problems 29 %; development of disease 43 %; parasites 29%; abandonment aspect 86 %.

The bare set aside influences the erosion, fertility and soil structure.

Regarding the **erosion**, the impact is negative because the soil is directly exposed to wind and rain and it favours the loss of superficial layers.

Table 24 shows that the percentage of land affected by erosion is very high..

**Table 24 Percentage of land affected by erosion according to its degree**

	Severe	Moderate	Mild	Inappreciable
Extremadura	27'4	26'9	7'0	38'7

*Source: MOPU, 1989*

Instead, from the point of view of **structure**, the maintenance of land with bare set aside is positive and also regarding to the **long-term fertility**. Leaving the soil rest, giving it air, allow it to recharge water, etc, are traditional agricultural practices that, as a whole, are considered as positive to the management of land.

Nevertheless, as a result of the reform of 1992, total fallow have decreased and marginal land is recovered and used to locate set aside. So, the positive effect attributed to fallow regarding long-term soil fertility is not reinforced from the coming into force of the set aside of land policy. Whereas, marginal land cultivation has as a result soil erosion and in meadows it can damage tree roots. (Beaufoy, 1995).

<sup>5</sup> VID Annex 4 Managers and experts consulted

<sup>6</sup> VID National Report Annex 7

Managers surveyed think that the implementation of set aside have favoured the existence of more exposed to erosion lands.

Only a 9 % of surveyed take part in any agroenvironmental program. A 67 % of them is related to soil protection.

With the data from the survey and according to the criteria established in matrix 5.4, the maintenance of soils in set aside lands has a neutral influence in a 72 % of cases and negative impact is bigger than the positive.

**Table 25 Matrix for analysing the relationship between agricultural practices on fallow land and soil management**

Type of behaviour	Negative changes: behaviour that does not drive to a better management of soil in set aside	Invariable behaviour in the management of land with respect to the preceding situation	Mainly positive change: behaviour that drives to an enhancement in the management of soil in set aside lands
Types of practices linked to soil management that allow for a classification:	<ul style="list-style-type: none"> <li>Bare set aside or with a poor cubierta in areas of erosion risk</li> <li>Usage of weedkiller (non-innocuous) in non-cultivated set aside lands</li> <li>Fixed set aside in areas with erosion risk</li> </ul>	<ul style="list-style-type: none"> <li>Cultivation of set aside land to non-food use</li> <li>Proper management of set aside</li> <li>Fixed set aside in areas without erosion risks</li> </ul>	<ul style="list-style-type: none"> <li>Sowing of plants that will enrich set aside lands</li> <li>Non-usage of pesticides</li> <li>Long duration Plantations (forestation)</li> <li>Farmer takes part in any type of agroenvironmental measure to protect soils</li> </ul>
Classification of holding according to prevalent practices.	9 %	72 %	19 %

*Source: Selfmade criteria regarding main regional features*

## 5.2. Question 4.4.2:

**Did the adoption of the set-aside of land have a significant impact on the improvement of the water management (pollution, water resources maintenance including ground waters, floods etc)?**

*The results in the surveyed area indicate that the impact of set aside in the management of water is neutral in a 94% and positive in a 6%.*

*In the whole region, the impact is neutral as well.*

*At national level, the higher consumption of nitrogenous fertilisers might have a negative impact when increasing the nitrogen content in superficial and underground waters. We can not say that this behaviour in the usage of fertilisers is a result of the set aside of land policy*

### • Detail of answer

#### *Management of a scarce resource*

The opinion of managers surveyed is that the implementation of set aside of land policy has not any impact in the enhancement of water management.

Anyone of the surveyed water set aside lands nor is performing agroenvironmental programs regarding water protection.

The behaviour in water management does not change with respect to the previous situation.

**Table 26 Matrix to analyse relationship between management of fallow land and water management<sup>7</sup>  
(excluding water issues associated with erosion discussed above)**

Type of behaviour	Negative changes: behaviour that does not drive to a better management of water in set aside	Changes: Invariable behaviour in the management of land with respect to the preceding situation	Mainly positive change: behaviour that drives to an enhancement in the management of water in set aside lands
<b>Types of practices linked to water management that allow for a classification (to be validated by the surveyor according to the agricultural characteristics prevalent in the region)</b>	Usage of pesticides or nitrates in non-cultivated set aside lands. Irrigation of set aside land	Cultivation of set aside land for non-food use Proper management of set aside land	Fixed set aside in humid areas along water courses Sowing of plants that will enrich soil in set aside lands Non-irrigation in set aside lands Non-usage of pesticides Farmer takes part in any type of agroenvironmental measure to protect water.
<b>Classification of holding according to prevalent practices (only one category)</b>	0 %	94 %	6 %

*Source: Self made criteria regarding main regional features*

#### ***Water contamination due to the usage of nitrogenous fertilizers***

The main environmental problem generated by the use of fertilisers in agriculture is water contamination by nitrates. Regarding the use of nitrogenous fertilisers there are no data available at regional level. National data show that from 1993 the downward consumption trend is reverted (Figure 22).

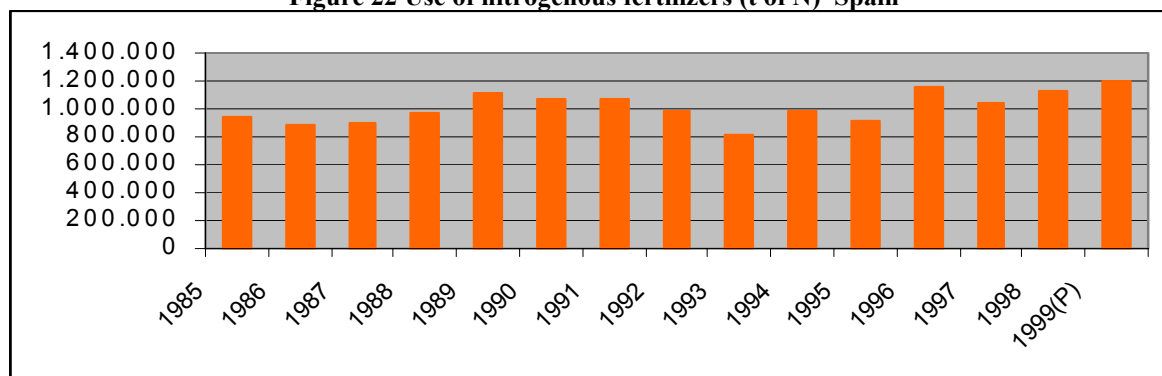
Spain does not stand out by an extreme use of chemical fertilisers, according to data of 1988, as shown in the following table.

**Table 27 Units of macronutrients used by hectares**

	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	TOTAL
España	56,2	26,3	16,4	98,9
Europe (mean)	111,7	55,7	59,9	227,3

*Source: FAO 1988*

**Figure 22 Use of nitrogenous fertilizers (t of N) Spain**



*Source INE*

<sup>7</sup> This matrix examines the impacts of set aside in comparison to the impacts if the land had been cultivated

With respect to 1988 the consumption at national level have increased, but we can not say that this trend is a result of the implementation of set aside of land policy.

### 5.3. Question 4.4.3:

**Did the adoption of the set-aside of land have a significant impact on the improvement of the landscape management ?**

Due to the fact that the evaluation of landscape has a subjective object, to estimate the impact of set aside the traditional regional landscape is described and the change produced as a result of the implementation of the set aside of land is observed.

- **Synthetic answer**

*As a result of compensatory payment policy semi-abandoned cultivation lands were recovered, contributing to recover traditional landscape formed by colourful mosaics in the steppes. In meadow areas set aside impact on the landscape is considered as negative.*

*In the area surveyed the impact is considered as negative in a 28 % and invariable in a 72 %*

- **Detail of answer**

There are two characteristic types of land cover in the region: meadows and steppes. Both are under a mixture of permanent pasture and extensive arable cultivation and are of a very high conservation value. Meadows are characterised by an open canopy of oaks, which traditionally formed an integral part of the farming system. Sizeable areas were completely deforested in the past, forming the extensive open landscapes known as steppes.

During the 1960s and 1970s the population in rural districts dropped enormously as people moved into urban centres. The most striking change was the abandonment of arable cultivation on marginal land in both meadow and steppe areas.

From the time of Spanish accession to the UE in 1986, the processes of marginalization and decline, which were evident in the 1970s and 1980s, appear to have been slowed or even reversed.

But the widespread loss of a landscape mosaic of cultivated, grazed and fallow land has been only partially recovered. As we have seen in questions 411 and 412 although the new payments introduced by the 1992 CAP reform have encouraged the cultivation of land that in some cases may even have been in a state of semi-abandon. But the proportion of fallow and cultivated land in these marginal lands has changed mainly for an important decrease of the fallow land.

In the opinion of experts in steppes it has favours the colourful mosaic, but in meadows the impact of set aside of land on the landscape is negative.

The **survey data** are the following:

- A 97 % declare not having any comments about the abandon situation of the lands, and a 3 % remaining did not answer.
- A 31 % declare that the maintenance of set aside lands make them be remarked in the landscape.
- A 25 % declare that they concentrate their set aside lands in the same area of their holding, a 62 % of which declare that there are more holdings that locate set aside in this area.
- A 9 % of them declare that they are taking part of an environmental program and a 33 % refer to the preservation of landscape.

With these data and according to the criteria set in matrix 5.4 set aside has no influence on the landscape in a 72 % of cases, and has a negative impact in a 28 %.

**Table 28 Matrix to analyse the relationship between agricultural practices for fallow land and their impacts on the landscape<sup>8</sup>**

Type of behaviour	Uses of set aside land with a change of practices that have negative impact on landscape	Usage of set aside lands with practices that have not effect on the landscape
Types of practices linked to landscape that allow for a classification (to be validated by the surveyor according to the agricultural characteristics prevalent in the region)	Poor management of set aside High concentration of set aside lands in a single area	Good management of set aside Cultivated set aside
Classification of holding according to prevalent practices (only one category)	28 %	72 %

*Source: Self made criteria regarding main regional features*

#### **5.4. Question 4.4.4:**

**Did the adoption of the set-aside have a significant impact on the bio-diversity maintenance?**

Considering that the management of species is closely linked with the preservation of their habitat (María Dolores Fernández Guillén; Rob H. G. Jongman (1994)), the influence set aside has on the preservation of biodiversity is estimated as it contributes to the maintenance of habitats.

- Synthetic answer**

*We can say that set aside of land had certain positive influence because being joined to the compensatory payment policy it helps to incorporate to cultivation some abandoned lands and agricultural activity favours the propagation and preservation of species linked to the habitat formed by cultivation and fallow lands*

- Detail of answer**

Extremadura region is of special nature conservation value for a wide range of species, including reptiles, amphibians, flora, mammals, etc. Currently, most of available data relates to birds. The Spanish NGO SEO/ Birdlife has identified 50 Important Bird Areas (IBA) in Extremadura, covering a total surface area of 3 million ha. This represents almost 23 % of the Spanish IBA. There are currently six special Protection Areas (SPA) for birds in the region, covering a total land area of 191,000 ha.

Cereal arable crops, with low consumption of fertilisers or agrochemistry, keeping the colourful crop mosaic formed by cereal, leguminous plants, pasture and fallow, offer habitat and food for many interesting, unique or very rare species in Europe (Dolores Manteiga López, Carlos Sunyer Lachiondo 1997)

In the opinion of surveyed managers, the implementation of set aside of lands have favoured in the countryside the flora and fauna species linked to the habitat formed by cultivation and fallow lands.

A 9 % of surveyed declare to participate in agroenvironmental program and a 33 % of them refer to biodiversity conservation.

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<sup>8</sup> This matrix examines the impacts of set aside in comparison to the impacts if the land had been cultivated

Also, set aside with cover is favourable for biodiversity. In Extremadura it is allow the set aside with vegetable cover and a big number of producers is accepting it (38 % of producers).

## 6. ANSWER TO QUESTION 452

To answer these questions we have based in the analysis of implementation guidelines and surveys with managers of national and regional administrations, professional organisations and the surveyed farmers.

### 6.1. Question 4.5.2:

**What effect did numerous regulatory adaptations and the existence of numerous individual cases and did possibilities of transfer have cause on the effectiveness of the set-aside instrument?**

- **Synthetic answer**

*National and Regional guidelines adapt Community guidelines to the regional specifications without causing complications of the previous ones.*

*The main claims of farmers regarding administrative problems refer to: The information of set aside rates comes too late (75 %), too late subvention reception (72 %), complication of administrative procedures (47 %).*

- **Detail of answer**

We will focus in the regional regulation, because the effect of national regulations will be covered in the national report.

***Dispositions regarding compensatory payments policy and set aside of land***

The Consejería de Agricultura y Comercio publishes for the Comunidad autónoma de Extremadura in the Diario oficial de Extremadura two types of dispositions:

- orders to regulate the procedure for requesting, procedure and concession of subventions to producers of some herbaceous crops
- orders to establish minimum fallow surface area

Survey data regarding the efficacy of legislation

Administrative problems associated with implementation and control of set aside found in surveyed producers are:

- Surface errors in declaration : 34 %
- Not reached minimum size of plots (surface or width): 3 %
- Minimum yield of non-food set aside not reached or difficult to reach: 6 %
- Problematic date of beginning or end of set aside regarding cultural current practices: 16 %
- The information about set aside rates comes too late: 75 %
- Complication of administrative procedures: 47 %
- Lack of integration of the different PAC subventions, specially agroenvironmental: 38 %
- Too late reception of subventions: 72 %

A 28 % declare to know the regulation about the maintenance and preservation of environment in fallow and a 34 % declare to know it a little. A 55 % applies these regulation known through:

- Annexed information to PAC documentation: 10 %
- Information sent by a professional of my organisation: 65 %
- Press Information: 30 %
- City Council official notification: 0 %
- Others: 15 %