

Thirty years of agriculture in Europe

Arable land, increased size of holdings and changes in crop rotation

Statistics in focus

AGRICULTURE AND FISHERIES

THEME 5 – 12/2000

AGRICULTURE

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Arable crops have always been a cornerstone of agriculture in Europe, and the reform of the Common Agricultural Policy (CAP) has not diminished their prime importance. In 1997, more than half of utilised agricultural area (UAA) in the European Union was arable land, and more than 6 in 10 holdings farmed it. However, the last thirty years have seen a number of changes. The number of holdings with arable land fell to the same extent as the total number of holdings, thus reducing their relative proportion. Average UAA per holding increased and crop rotations changed. The main change since 1993 was the sharp increase in fallow land owing to the introduction of the CAP reform in 1992. It should however be noted that only 1 in 5 holdings with cereals had subsidised fallow land as part of its farmland in 1997, which underlines the considerable number of small producers in EU-15.

Fewer holdings with arable land

Between 1967 and 1997, the total number of holdings fell by 2.7 million in EU-6*¹ (Statistics in Focus No 1/2000, theme 5, Farm numbers declining as farms grow in size), and the number of holdings with arable land fell by 2.8 million (Figure 1). A large number of farmers therefore abandoned arable crop farming. The proportion of holdings with arable land thus declined from 81% of total holdings in 1967 to 64% in 1997, as holdings moved their type of production or their specialisation to other activities.

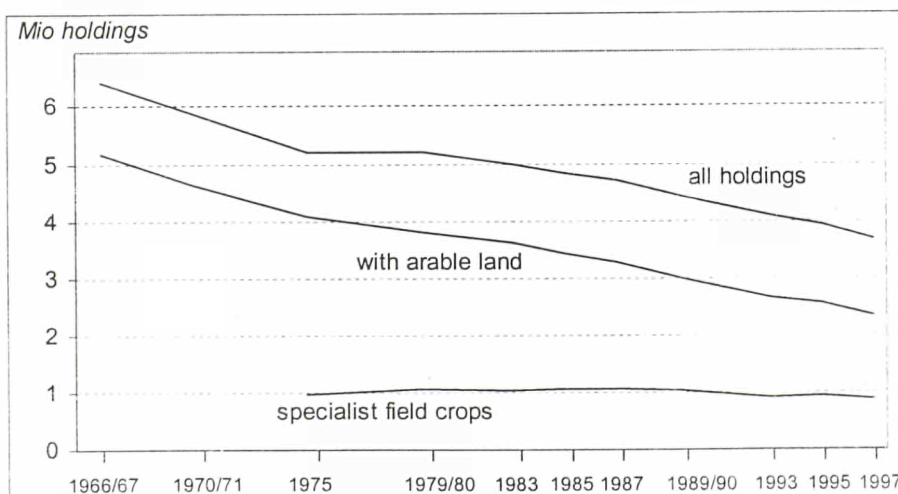


Figure 1: Changes in the number of holdings in EU-6* between 1967 and 1997

¹ In order to avoid an analysis of changes due to German reunification, throughout this article, EU-9*, EU-12*, D*, etc. refer to units which do not include the former GDR.



There were contrasting trends in the six founding Member States. The structure of agricultural holdings in Italy and the way they are passed on from one generation to another explains why the decline was less in that country (-40%). In the other countries the number of holdings with arable land at least halved. These declines ranged from 56% in the Netherlands to 68% in Belgium. Throughout EU-6* these relative declines were comparable to or greater than those of total agricultural holdings (Table 1).

Countries	All holdings	Holdings with arable land
B	-69%	-68%
D*	-60%	-67%
F	-60%	-66%
I	-22%	-40%
L	-65%	-72%
NL	-56%	-56%
EU-6*	-43%	-55%

Table 1: Changes in the number of holdings in EU-6* (1967-1997)

For the period 1975-1997, the number of holdings with arable land also fell in EU-9*, and there were contrasting trends in the various Member States. The decline was still smaller in Italy as well as in the Netherlands and the United Kingdom (32%, 26% and 35% respectively) than the EU-9* average (42%). However, the decline exceeded 50% elsewhere including the other two countries which had just joined. **Denmark** and **Ireland** had restructured their agriculture following their entry into the European Community. In the **United Kingdom**, the size of holdings was already large and there was therefore less concentration (Figure 2).

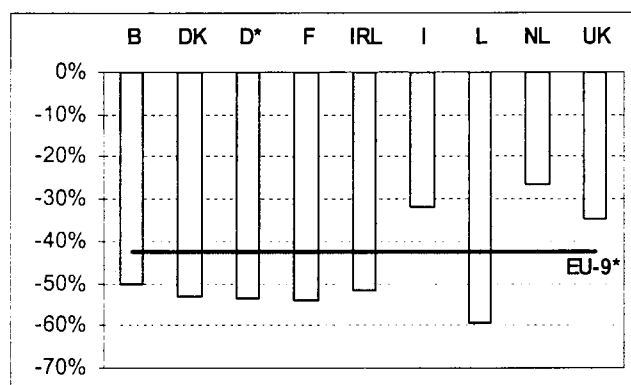


Figure 2: Changes in the number of holdings with arable land in EU-9* between 1975 and 1997

Over the decade 1987-1997, the number of holdings with arable land fell more sharply than that of all agricultural holdings in Europe. For EU-12* this change was -32% for the former compared with -24% for the latter. In the course of ten years, one in three holdings with arable land had disappeared or no longer had arable land. This trend was even more pronounced in terms of the European average for holdings with cereals (-37%), though the situation varied from country to country (Figure 3). In Ireland, three quarters of holdings with cereals (18 000) had ceased to exist (for the smallest) or had dropped cereals (large-scale holdings), although the area under cereals remained unchanged. In the Netherlands, the number of holdings with cereals remained unchanged, with concentration occurring through an increase in the area under cereals (+14%).

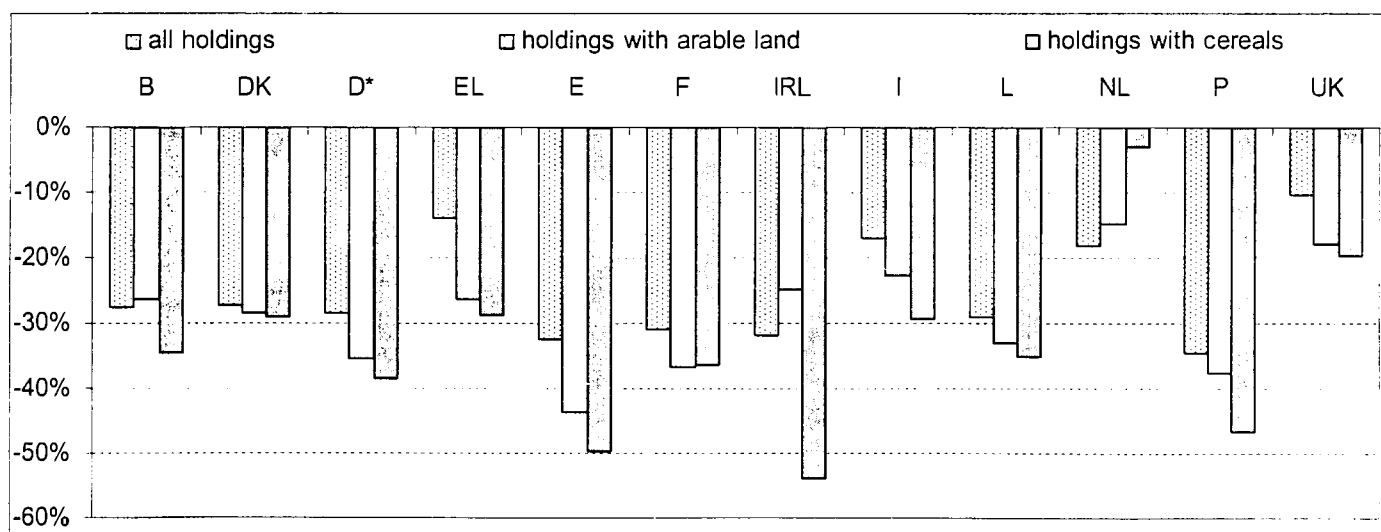


Figure 3: Changes in the number of holdings between 1987 and 1997 in EU-12*

The same amount of arable land for a rising level of output

In 1997, more than half of the UAA of the European Union was arable land (67.4 million hectares of the 128.5 million hectares of UAA of EU-15). While the number of holdings with arable land has fallen sharply over the last thirty years, the area of arable land has remained unchanged or even increased slightly in certain countries.

Between 1967 and 1997 the area of arable land in EU-6* increased by 4%. With the decline in the number of holdings, the average area of arable land per holding with arable land increased over this period. It more than doubled in EU-6*, increasing from 6.7 ha in 1967 to 15.3 ha in 1997. This increase has been more pronounced since 1989/90, particularly in **France** and **Luxembourg** (Figure 4).

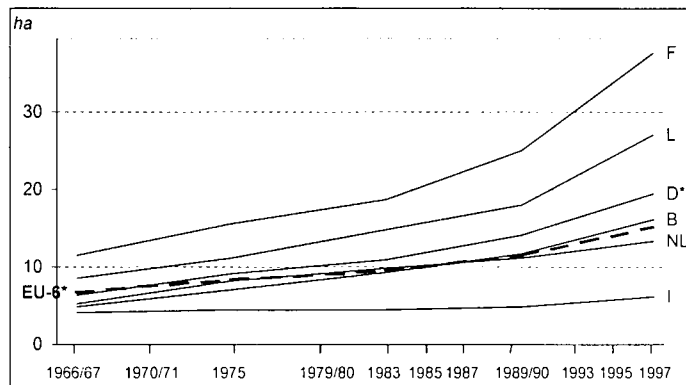


Figure 4: Changes in the average area of arable land per holding with arable land in EU-6*

Between 1975 and 1997, the average area of arable land per holding increased by 80% in EU-9*. Though it increased from 10.3 ha to 18.5 ha per holding, this average increase masked individual differences. In Italy and the United Kingdom, the increase in average area of arable land was more moderate (+40%) (Figure 5).

Italy saw its average area of arable land increase from 4.4 ha to 6.1 ha per holding. This value was by far the lowest in EU-9*.

In the **United Kingdom**, the situation was the reverse. The increase was small, as holdings were already of a large size in 1975. The average area of arable land per holding with arable land increased from 35 ha in 1975 to 51 ha in 1997 in the United Kingdom.

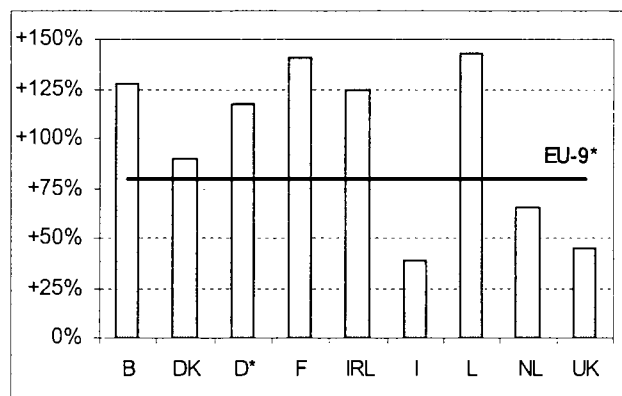


Figure 5: Changes in the average area of arable land per holding with arable land between 1975 and 1997 in EU-9*

There was also a pronounced concentration of holdings with arable land between 1987 and 1997. It was particularly marked for the Member States at the centre of EU-12 (**France, Germany, Luxembourg, Belgium**). In France, for example, the average area of arable land increased by 71% in 10 years, i.e. on average, 6 ha more per holding. The increase was also noticeable in the Member States which joined in 1986 (**Spain, Portugal**), where the average area of arable land increased with the disappearance of numerous smallholdings. In **Greece** the proportion of market gardening in arable land limited the increase in size of holdings with arable land (Figure 6).

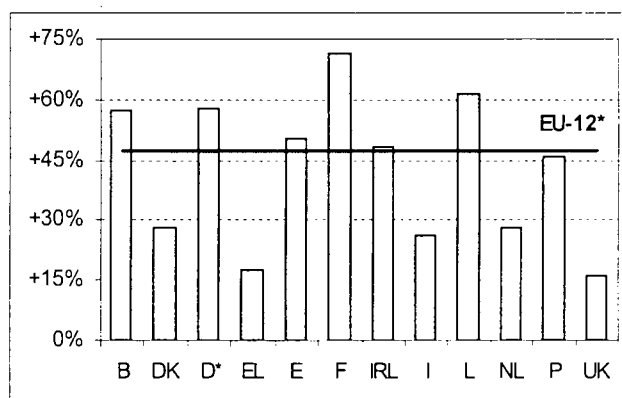


Figure 6: Changes in the average area of arable land per holding with arable land between 1987 and 1997 in EU-12*

Between 1975 and 1997 in EU-9*, arable land was little changed, with total area rising from 44.9 million ha to 46 million ha. Some changes affected the breakdown of arable land but cereals remained predominant (Figure 7).

Cereals nevertheless saw a decline in both absolute and relative terms (from 60% to 52% of area of arable land). Various developments in the CAP (guaranteed maximum quantities in 1987, introduction of set-aside arrangements in 1992) therefore halted the expansion of cereals.

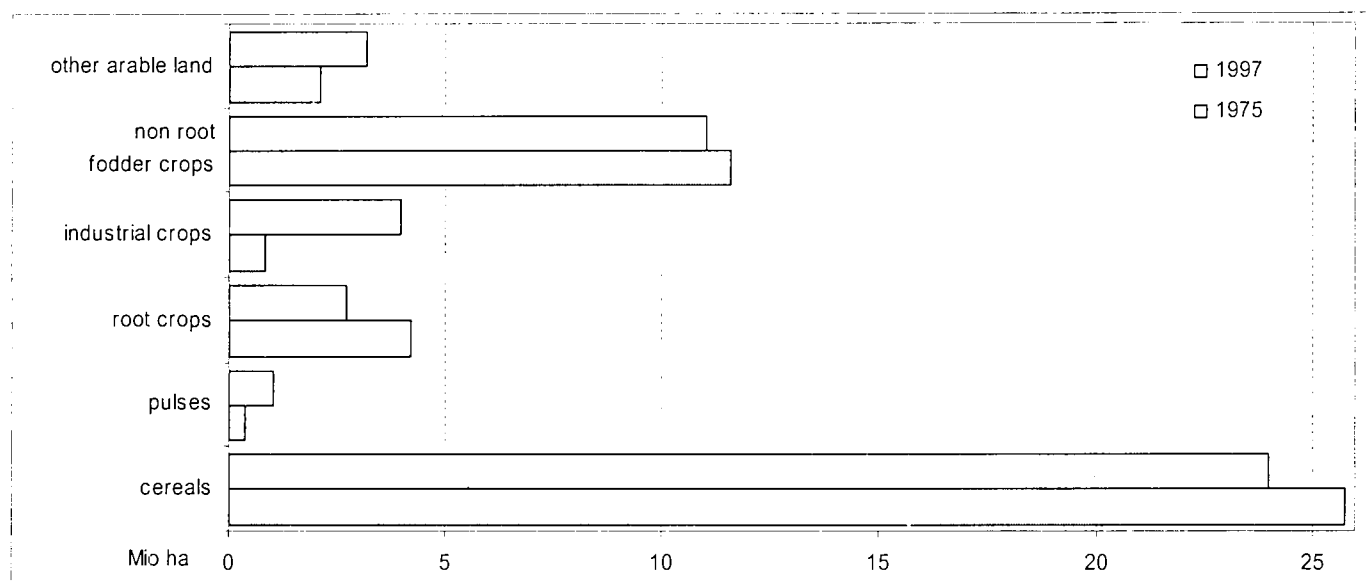


Figure 7: Area of arable crops in 1975 and 1997 in EU-9*

Between 1987 and 1997 in EU-12*, the area of arable land declined by 200 000 ha (i.e. barely 0.5%). The implementation of the CAP reform thus achieved its objectives of area stabilisation. The situation continued to vary from country to country in terms of the proportion of the various crops in total

arable land (Figure 8). Yields showed a marked increase. For example, cereals output on a smaller area was 179 million tonnes in 1997 compared with 157 million tonnes in 1987 in EU-12* (Figures from the "Agricultural Products" database), i.e. an increase of 14%.



Figure 8: Distribution of the various areas of arable land in EU-15 in 1997

Redeployment of fodder crops and development of industrial crops

- **Non-root fodder crops** accounted for 14.9 million ha in 1997 in EU-15, i.e. a fifth of the area of arable land.

Between 1975 and 1997 in EU-9*, the area under non-root fodder crops declined slightly (-600 000 ha). This trend masked contrasting developments of an increase in annual fodder products (fodder maize) and a decline in perennial fodder products (leguminous plants) and temporary grassland. This was accompanied by a drop in fodder root crops (-63%).

Between 1987 and 1997, the area under non-root fodder crops saw an overall increase of 300 000 ha in EU-12* (+3%). The downward trend observed for the period 1975-1997 in EU-9* was therefore limited to the first part of the period. Table 2 shows an increase in area under fodder crops from 1989/90 onwards in EU-12*.

In 1997 fodder crops accounted for 20% of areas of arable land, compared with 19% in 1987. This increase took place alongside a reduction in the more extensive, permanent grassland, which lost 21% of its area over the same period (i.e. 6.5 million ha).

Rising productivity levels for areas under annual fodder crops and CAP grants (equivalent to those provided for cereals) greatly encouraged producers to plough up their grassland, in some cases in spite of unfavourable conditions (land subject to flooding or sloping etc.). Fodder for silage, which has a high production potential and a high energy content and can be incorporated into all types of feeds for herbivores, emerged as the reference feed for many farmers and its use increased. However, the ecological consequences of such choices were rarely taken into account.

year	Fodder crops		Permanent pasture and meadow	
	Mio ha	trend	Mio ha	trend
1987	12.1	↙ -7.6%	30.5	↙ -0.3%
1989/90	11.2	↗ +7.3%	30.4	↙ -7.4%
1993	12.0	↗ +2.5%	28.1	↙ -14.1%
1995	12.3	↗ +0.9%	24.2	↙ -0.9%
1997	12.4		23.9	

Table 2: Changes in fodder area between 1987 and 1997 in EU-12*

- Between 1975 and 1997 in EU-9*, **industrial crops** saw a very sharp increase, from 850 000 ha to nearly 4 million ha. France and, to a lesser extent, Italy, the United Kingdom and Germany invested in these attractive crops (improvements in varieties, incentives, no separate investment). In the case of pulses (in particular field peas), the area increased by a factor of 3, though total area remained modest.

Between 1987 and 1997 area under industrial crops (non-food agricultural production) increased by 14% (700 000 ha) in EU-12*. Rape and cotton increased by 150 000 ha and 200 000 ha respectively.

- There was a sharp decline in area under **root crops**, owing to the need for considerable separate investment and expenses (and the existence of strict quotas for sugar beet). Between 1975 and 1987 in EU-9* these areas changed from 4.2 million ha to 3 million ha. The 1987-1997 period confirmed this trend, with a decline from 3.5 million ha to 3.1 million ha in area EU-12*.

Fallow land linked to CAP reform

"Other arable crops" (includes **fallow land**, Box page 7) also increased (+17.7%), with the development of set-aside areas following the 1992 CAP reform.

Fallow land is an integral part of several European farming systems. In 1987, when no set-aside arrangements had yet been put in place, the area of fallow land was 4.1 million ha.

Between 1987 and 1993 in EU-12*, the area of fallow land doubled to 8.2 million ha. This increase was in large part due to fallow land subject to set-aside

incentive schemes. Between 1987 and 1997, the area of agricultural fallow land declined from 4.1 million ha to 3 million ha, whilst fallow land subject to set-aside incentive schemes increased from zero ha to 2.5 million ha over the same period. In 1995, 4.5 million ha of fallow land was subject to set-aside incentive schemes with a compulsory set-aside rate of 10%. In 1997, only 2.5 million ha remained, with a compulsory set-aside rate of 5% (Table 3).

	1987	1989/90	1993	1995	1997
Total fallow land, of which :	4.1	4.5	8.2	7.8	5.5
- "Agricultural" fallow land	4.1	4.0	4.6	3.3	3.0
- Fallow land subject to set-aside incentive schemes	0	0.5	3.6	4.5	2.5

Table 3: Fallow land in EU-12*

In 1988, voluntary set-aside was proposed in order to reduce cereal production. Following the 1992 CAP reform, set-aside became compulsory for farmers producing more than 92 tonnes of cereals. Since 1993, the trend for set-aside area has been closely linked to the set-aside rate applied (Figure 9).

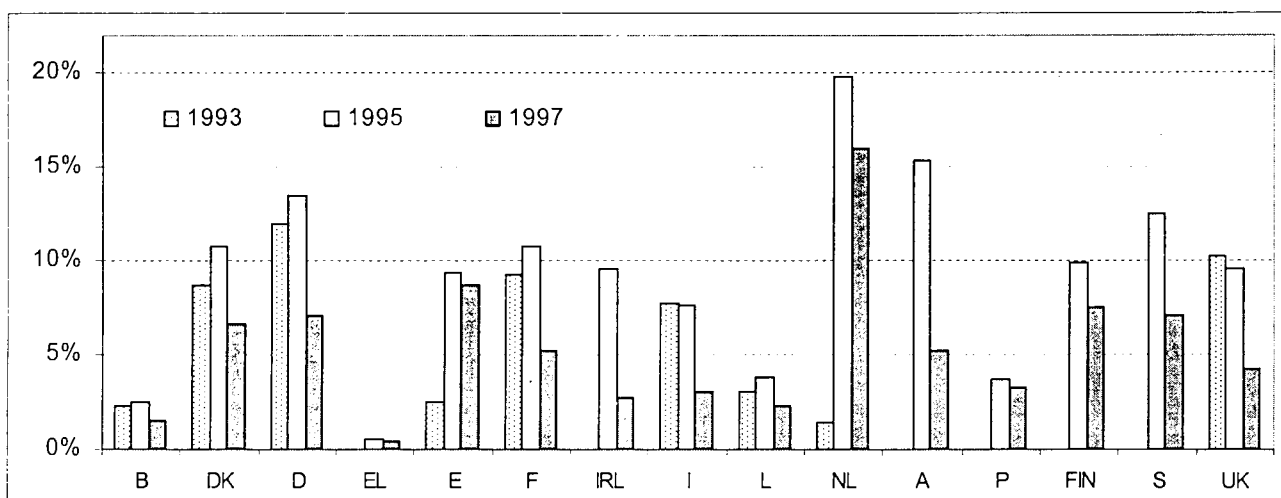


Figure 9: Fallow land subject to set-aside incentive schemes as a proportion of arable land²

In EU-15 in 1997, only one in five holdings producing cereals (600 000 holdings) had fallow land under incentive schemes. There was therefore a large number of small producers not subject to the CAP restrictions (over 2 million farmers), particularly in the countries of southern Europe (Figure 10).

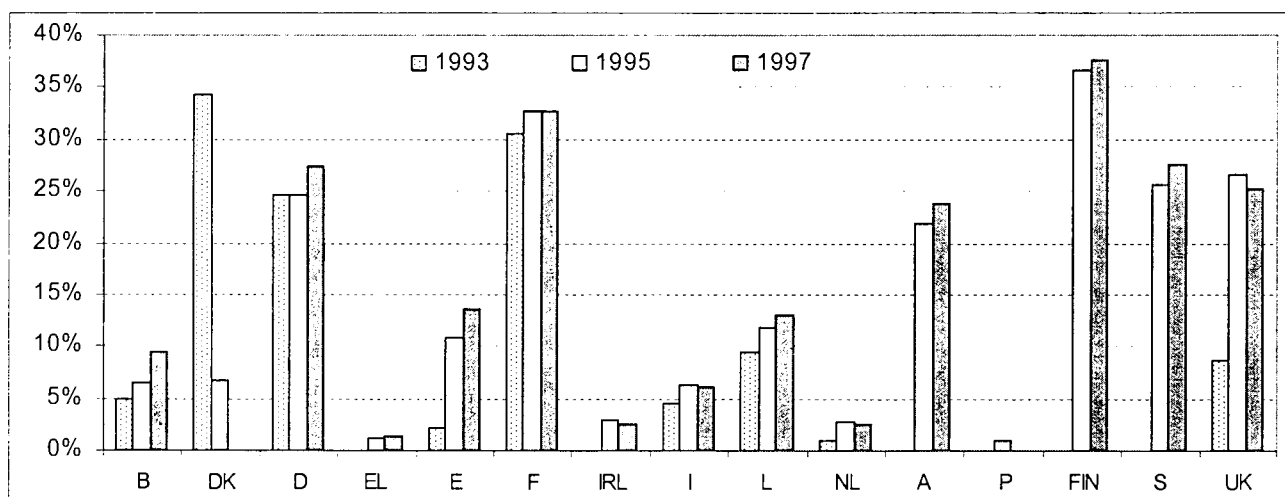


Figure 10: Proportion of holdings with arable land concerned by fallow land subject to set-aside incentive schemes²

The set-aside rate declined from 10% in 1995 to 5% in 1997. In EU-15, the total area of fallow land thus declined by 3,6 million ha (from 9 million ha to 5.5 million ha) and fallow land subject to set-aside incentive schemes declined by 2.4 million ha (from 5.7 million ha to 3.3 million ha).

In EU-15, the way in which farmers applied set-aside or reconverted land is documented in the survey on the structure of agricultural holdings

(Table 4). Of the 4.2 million hectares receiving financial aid in 1997, more than three quarters were subject to set-aside incentive schemes and had no economic use. There was a comparable proportion in 1995 for the 7.5 million hectares set aside. Industrial crops for non-food production (rape, beet etc.) were grown on 14% of the total area receiving financial aid in 1995 and on 12% of this area in 1997. Both cases involved temporary withdrawal measures.

² The figures for EL, IRL, P in 1993 and DK in 1997 are zero.

The permanent reallocation of areas of arable land to grassland and wooded area concerned only a small area (456 000 ha in 1997, i.e. 10.8% of areas receiving financial aid). This proportion remained stable in relation to 1995. These figures reflected the effects of Regulations 2078/92 (agri-environmental measures) and 2080/92

(afforestation of farmland). A more detailed explanation can be found in the joint publication of DG AGRI, DG ENV, and EUROSTAT, *Agriculture, Environment, Rural Development : facts and figures* (1999).

	1995		1997	
	1000 ha	%	1000 ha	%
"Agricultural" fallow land	3385	-	2204	-
Fallow land subject to set-aside incentive schemes	7483	100.0% ¹	4306	100.0%
of which, - fallow land	5658	75.6%	3291	76.4%
- industrial crops	1015	13.6%	499	11.6%
- conversion to grassland	699	9.3%	367	8.5%
- conversion to wooded area	54	0.7%	129	3.0%
- other	19	0.2%	20	0.5%

¹ Grassland, wooded area and other land are not broken down for Germany in 1995 (38 000 ha), hence the total of less than 100% for the sum of the sub-categories of areas subject to incentive schemes.

Table 4 : Area of fallow land or set-aside arable land in 1995 and 1997 in EU-15.

Box 1: fallow land

According to Official Journals No° L 251 of 12/09/1983: 0100-0136 ; L 391 of 30/12/1989: 0001-0041 ; n° L 149 of 06/06/1997

Fallow land is arable land which is left to recover, normally for the whole of the crop year. It should not be confused with catch crops, which are grown during the crop year without producing a harvest. It is part of crop rotation, unlike unutilised agricultural area, which remains uncultivated for at least five consecutive years. Fallow land may be:

1. bare land bearing no crops at all;
2. land with spontaneous natural growth, which may be used as feed or ploughed in;
3. land sown exclusively for the production of green manure (green fallow).

Fallow land without any subsidies:

All land included in the crop rotation system, whether worked or not, but not producing a harvest for the duration of a crop year, for which no financial aid or subsidy is paid for the reference year.

Fallow land subject to set-aside incentive schemes with no economic use:

Areas for which the holding is entitled to financial aid in order to encourage the set-aside of arable land according to Council Regulation (EEC) No. 797/85, last amended by Council Regulation (EEC) No. 1137/88, and according to Commission Regulations (EEC) No. 1272/88 and No. 1273/88 and, where applicable, the most recent legislation (for 1989/90 and 1993).

Areas for which the holding is entitled to financial aid in order to encourage the set-aside of arable land according to Council Regulation (EEC) No. 2328/91, as well as according to Council Regulation (EEC) N° 1765/92 and Commission Regulation (EEC) N° 334/93 or, where applicable, the most recent legislation (for 1995 and 1997).

In the text, *agricultural fallow land* refers to *fallow land without any subsidies*.

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