

Annexe 15 du rapport d'évaluation

EU COMMISSION

**EVALUATION OF THE IMPACT OF THE
COMMUNITY MEASURES ON SET-
ASIDE**

Regional report of Finland, Region B

**Helsinki
June 2001**

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1. REGIONAL CONTEXT

The Finnish regional administration consists of five mainland provinces and the self-governing Åland island. These provinces are divided to 1-7 regions. Agricultural administration and extension services are provided by farmer units at the employment and economic development centres which number 15. The geographical area of the development centres is often that of one region. However, some centres consist of two regions.

1.1 Description of the Agriculture of the Region

The support region B is spread to four provinces: Etelä-Suomi, Länsi-Suomi, Itä-Suomi and Ahvenanmaa. Support region B is not based on administrative units but rather on climatic conditions. Consequently, it consists of areas from seven development centres: Uusimaa (centre 1 in Annex 1), Varsinais-Suomi (2), Satakunta (3), Häme (4), Pirkanmaa (5), Kaakkois-Suomi (6) and Etelä-Savo (7). The areas of support region B and the employment and economic development centres are presented in Annex 1.

1.1.1 Altitude and Climate

The mean altitude of Finland is 152 m above sea level. The highest point in region B is located in Pirkanmaa (225 m above sea level). In 1999 the annual mean temperature was 4.8°C in Lappeenranta which is located in the eastern part of region B in the area of Kaakkois-Suomi (South-East Finland) development centre. Mean maximum temperature was 8.8°C and mean minimum temperature 1.2°C in 1999. The number of rainy days was 112 and the mean annual rainfall 513.3 mm. (Table 1).

Table 1 Climatological data on Lappeenranta in 1999

Mean Annual Rainfall	Number of Rainy Days (precipitation $\geq 1,0$ mm)	Mean Annual Temperature	Number of Clear (s) and Cloudy (p) Days
513.3 mm	112	4.8°C	s=27 p=145

Source: Statistics Finland, Statistical Yearbook of Finland

1.1.2 Population

As the region B does not match with administrative borders, the following demographical data on population and farmers are estimates based on data from the administrative units. Population in the region was 1.3 million in 1999. The average age of population was 41 years.

The number of farmers in the region was 23 300 in a case study from summer 1998. One third of farmers was over 60 years. Another third were in the age category of 35-49 years. (Table 2). The average age of farmers was 47 years in the 1998 study. Thus the average age of the farmers is six years above that of the general population in the region.

Table 2 Farmers by Age Classes in 1998

less than 35 yr.	35 to 49 yr.	50 to 59 yr.	more than 60 yr.
9%	33%	25%	33%

Source: Statistics Finland, Farm Register

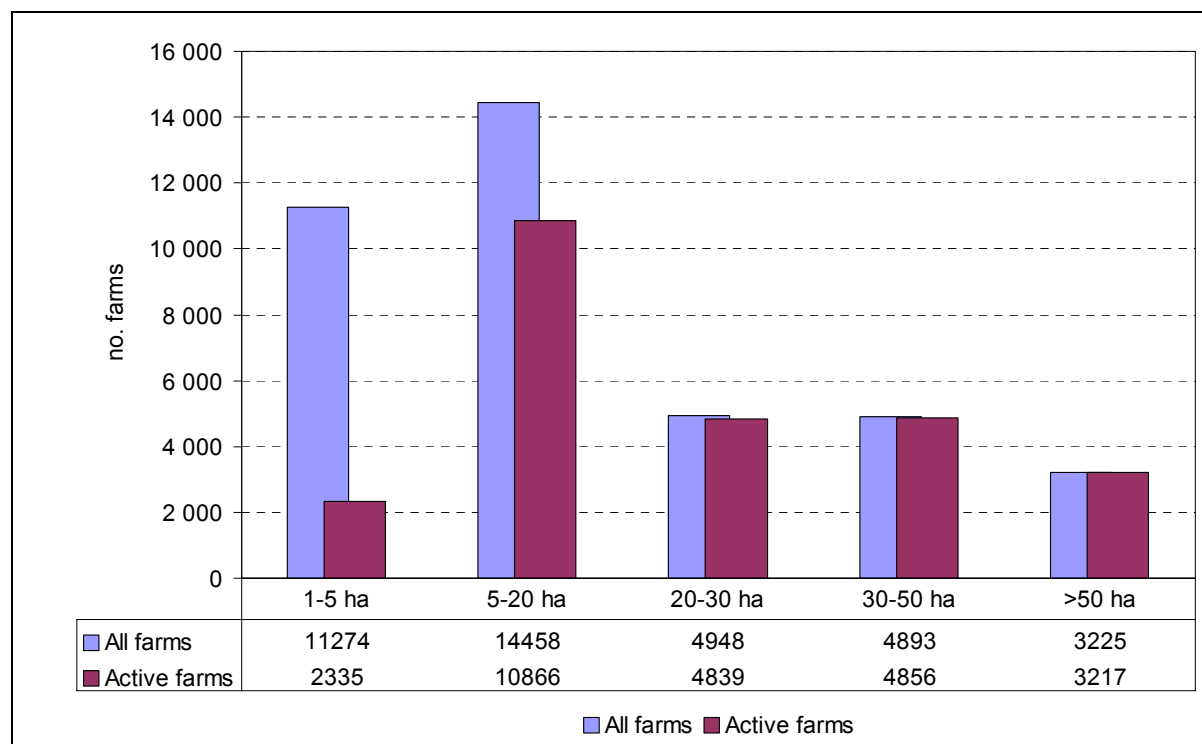
1.1.3 Farm Types

In the 1998 case study, the **total** number of farms was 38 798 and number of **active** farms (farms having agricultural production or other business activity) 26 113 in region B. Figure 1 shows that the

gap between the number of farms in the two categories can be mainly found in the lower end of the size categories.

The average size of all farms was 16.3 ha in the whole country while in the region B the respective figure was slightly higher, 17.2 ha. For active farms the respective figures were 25.0 ha (whole country) and 24.7 ha (region B).

Figure 1 All Farms and Active Farms by Size in Region B



Source: MAF data collected for the study

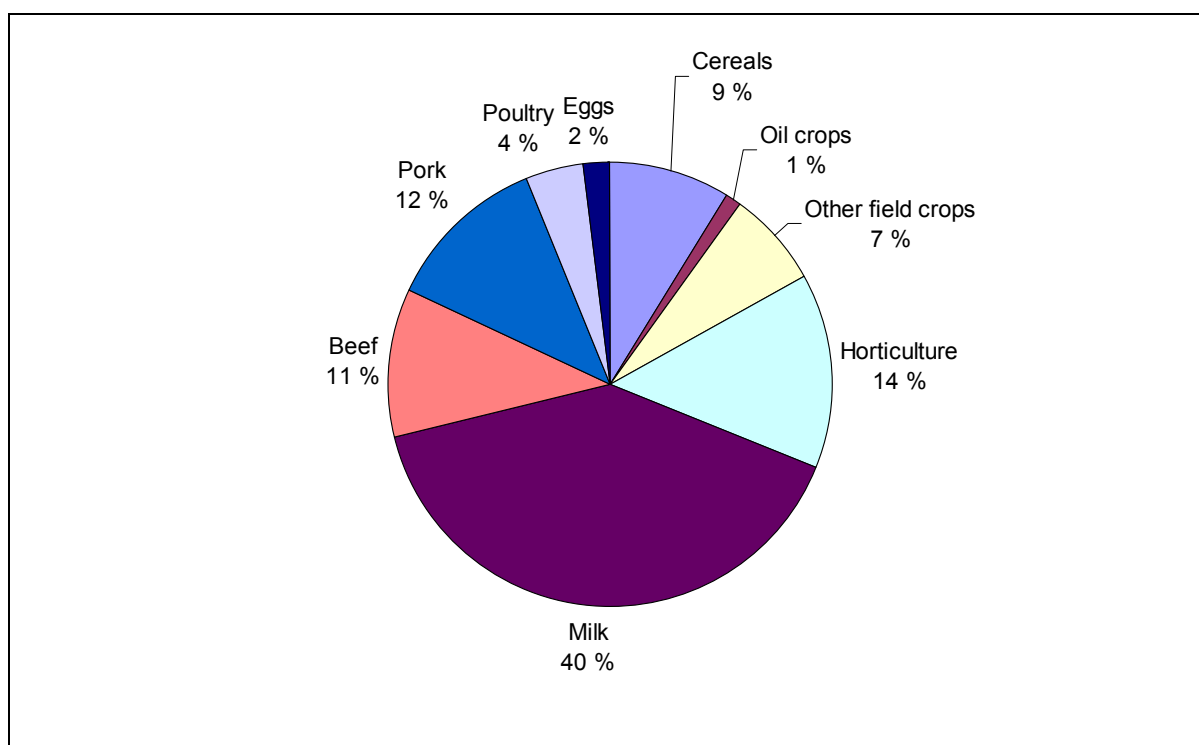
1.1.4 Irrigation

Irrigation is not needed in agricultural production in Finland. It may be occasionally used during drought using transferable equipment or in non-COP production. The latter case, the idea of spraying is, however, rather to prevent frost injuries for example on strawberry and potato fields. There are no statistics available on irrigated fields in Finland.

1.1.5 Agricultural Production in Finland in 1998

The value of farm production was in 1998 FIM 11 834 mill. (€ 1990 mill.). These figures does not include subsidies, income from rents and crop failure compensation. In production value terms, milk production is the most important production sector in Finland. Crop production, including horticulture, cereals, oil crops and other field crops (potato and sugar beets), contribute to almost one third the total production. The share of meat production is over one fourth of total production. Figure 2 shows the pattern of production in Finland in 1998.

Figure 2 **Structure of Production Value in Finnish Agriculture in 1998**

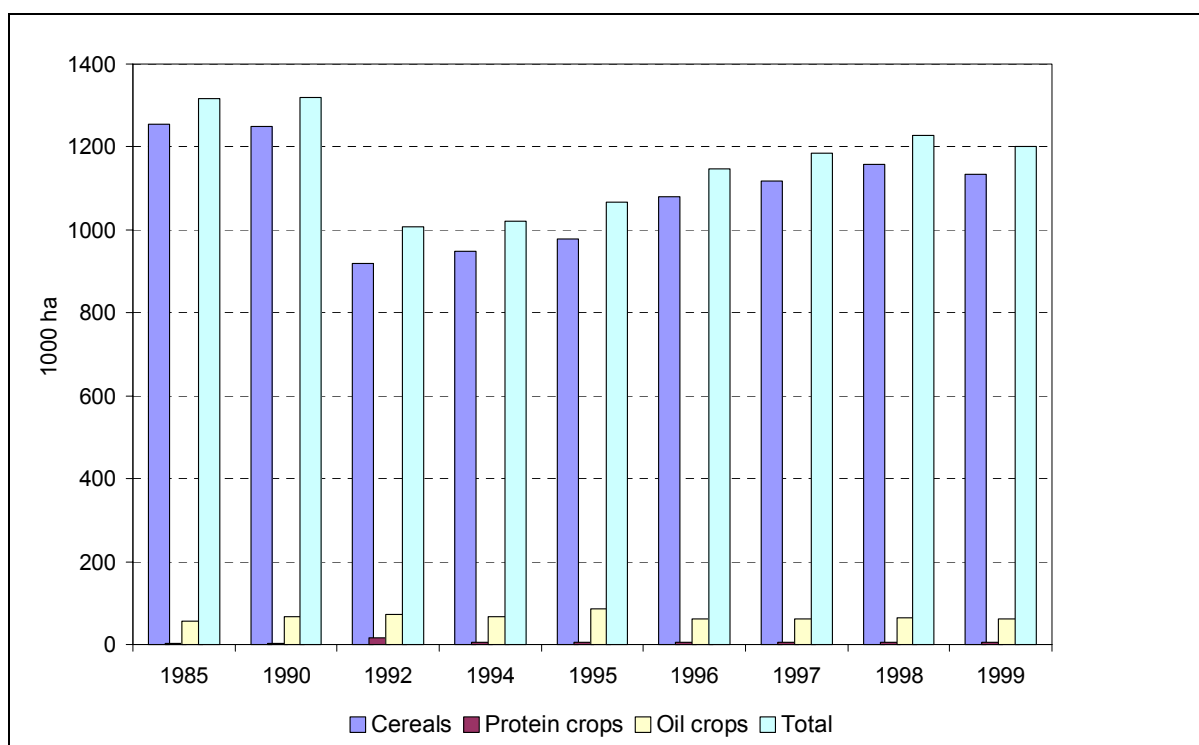


Source: The Economic Research Centre of Agriculture

1.1.6 COP Production in Finland in 1990–1999

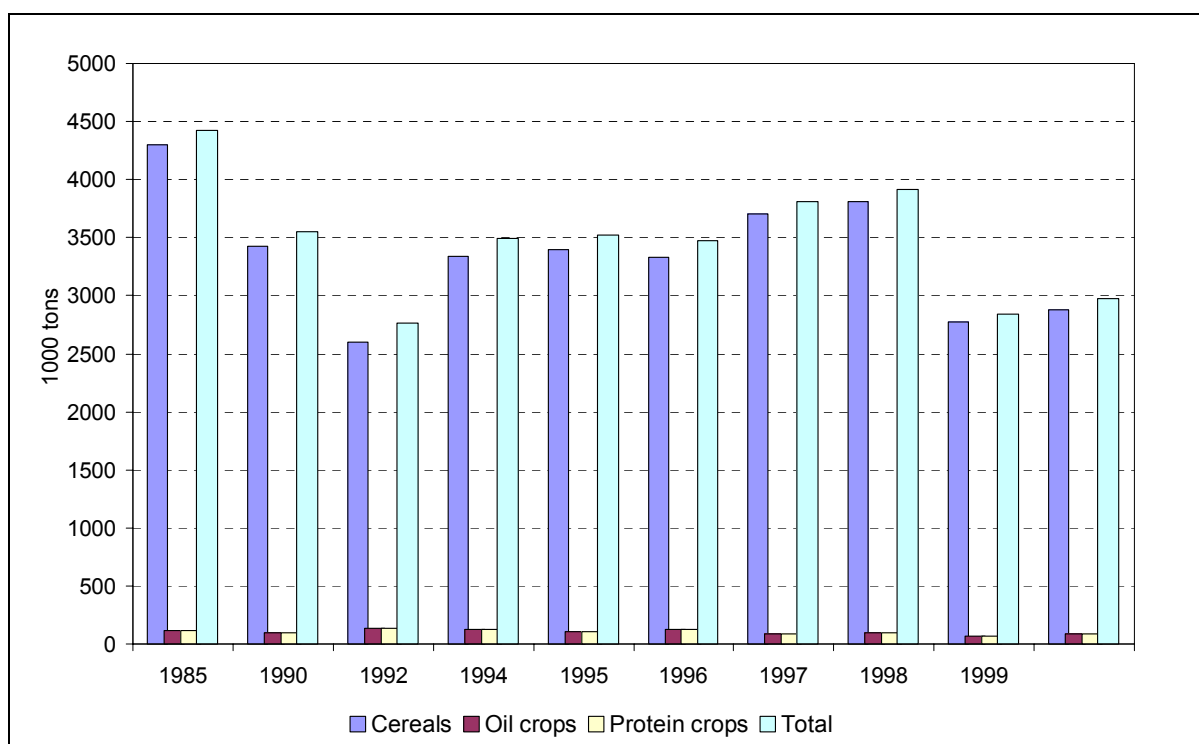
Total area of COP (cereal, oil and protein) crops was 1 204 417 ha in 1999. The area consisted mainly (over 94%) of cereals in 1999. The second largest group was oil crops (5%). The share of protein crops of total COP area is under one percent. Figure 3 illustrates the development of COP area in 1990-99. Respective production volumes are presented Figure 4.

Figure 3 COP Area in Finland 1990-1999



Source: Statistics Finland, annual agricultural statistics

Figure 4 Production of Cereals, Oil and Proteins in Finland (1990-1999, 1 000 tons)

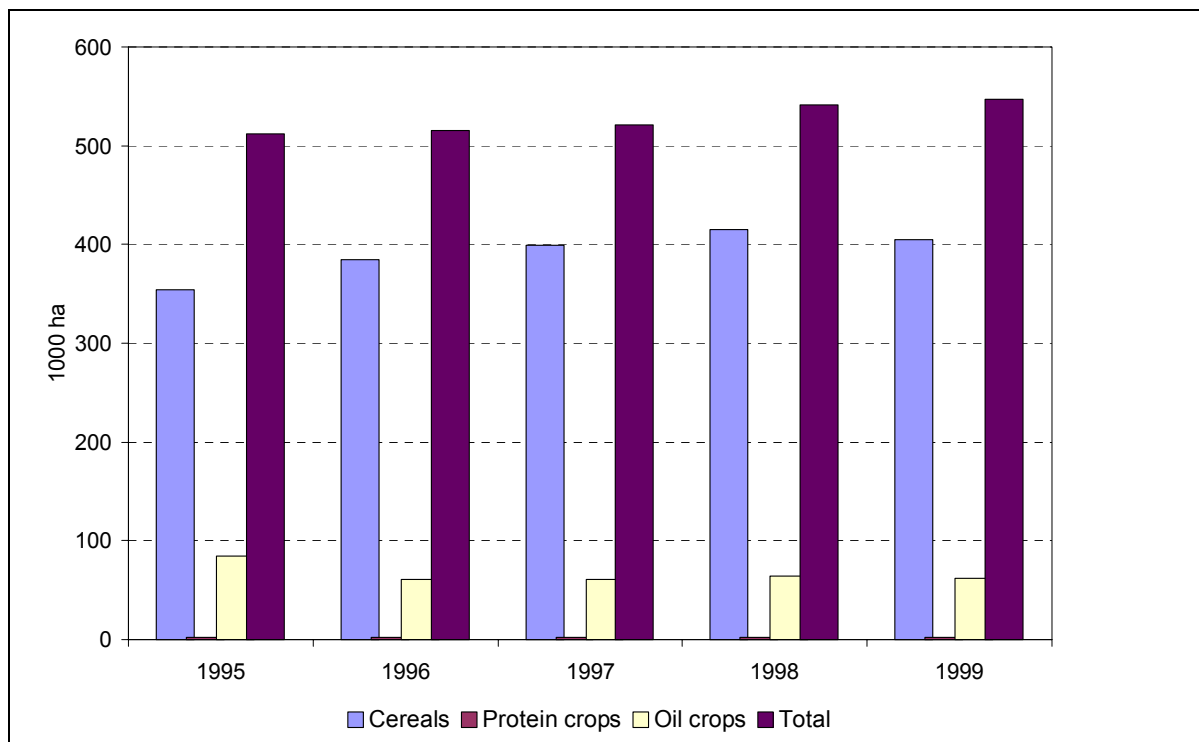


Source: Statistics Finland, annual agricultural statistics

1.1.7 COP Production in Region B in 1995–1999

Current support region classification was introduced in 1995 when Finland joined the EU. Consequently, there is production data for region B available only after 1995. (Figure 5)

Figure 5 COP area in Region B 1995-1999



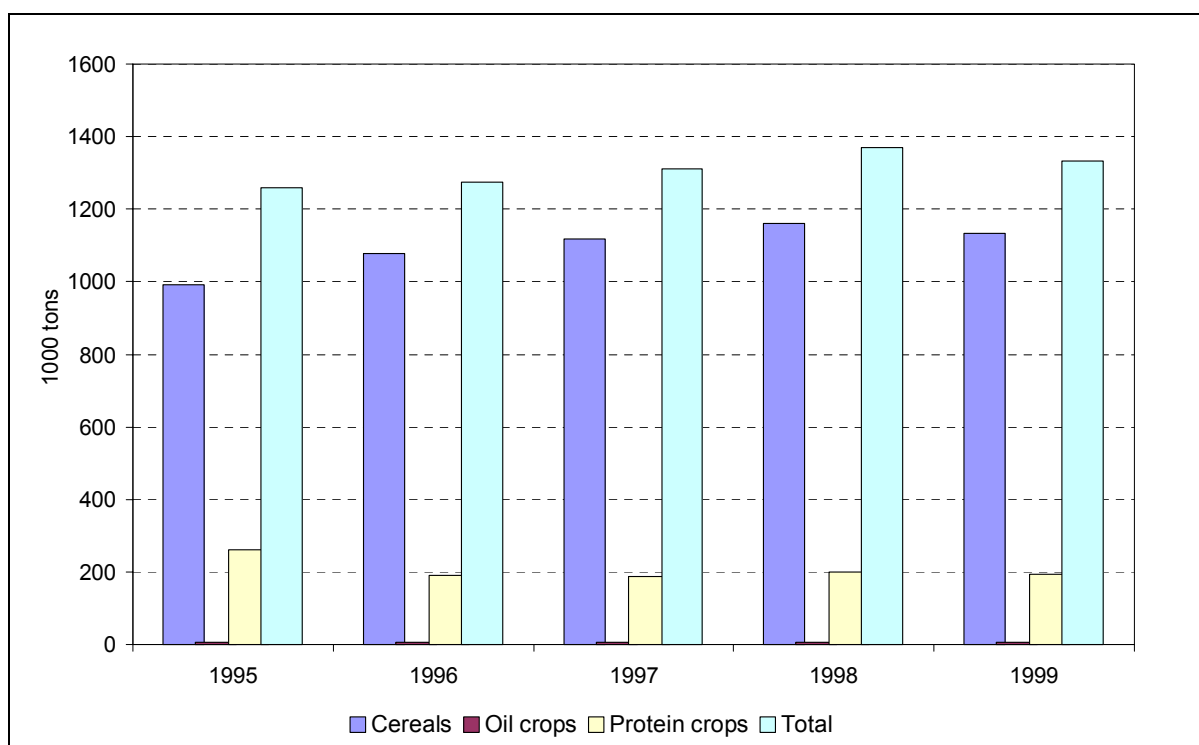
Source: MAF data collected for the study

There are no statistics available at support regional level on production volume. Production volume figures of COP crops are estimated by using the reference crop for region B (Figure 6).

Reference crops/ha are:

- cereals 2 800 kg/ha
- protein crops 2 800 kg/ha
- oil crops 3 100 kg/ha

Figure 6 COP Production in region B 1995-1999

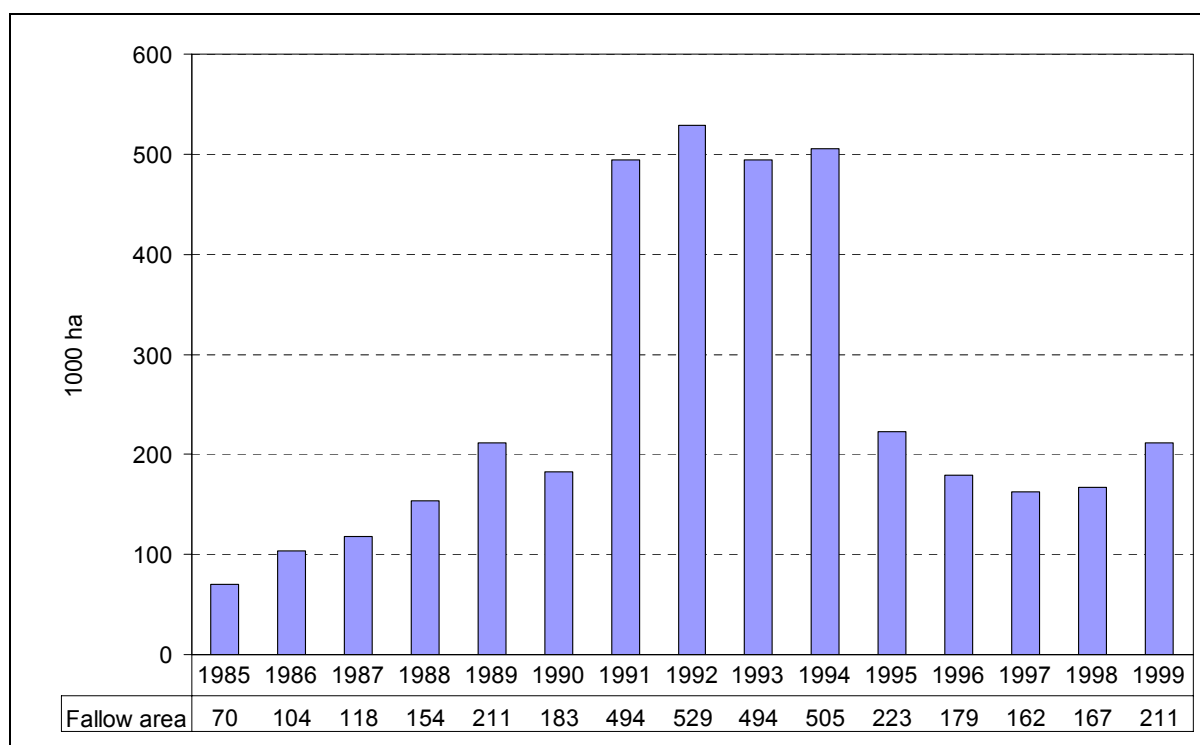


Source: MAF data collected for the study

1.1.8 Fallow

In the beginning of the 1990's fallow areas were at their peak. At the same time, amount of COP production area and volume were lower. Since 1995 set-aside area has been at the same level as it was at the end of the 1980's. Figure 7 illustrates the development of set-aside/fallow area in Finland.

Figure 7 Fallow in Finland (1000 ha, 1985-1999)



Source: Statistics Finland, annual agricultural statistics

1.2 Implementation of Set-aside

The rate for compulsory set-aside has been the same in the whole country. Even for voluntary set-aside, the rates implemented have been very similar throughout the country. In region B, compared to the country on average, the total rates have been slightly higher. The difference has, however, been quite small.

Table 3 Set-aside Granted Finland 1995-1999

	1995/96	1996/97	1997/98	1998/99	1999/2000
Percentage of obligatory set-aside	12/17%	10%	5%	5%	10%
Number of COP applications	29 815	32 027	330 870	33 315	34 474
SCOP + set-aside total	1 250 401	1 320 830	1 339 716	1 385 907	1 407 742
SCOP + obligatory set-aside	1 137 555	1 202 841	1 216 381	1 261 204	1 272 010
SCOP + voluntary set-aside	1 180 559	1 265 961	1 310 633	1 354 003	1 339 483
Set-aside total /SCOP	16,94%	14,95%	12,81%	12,71%	16,88%
Obligatory set-aside/SCOP	6,38%	4,68%	2,42%	2,57%	5,61%
Set-aside total (ha)	179 520	170 772	151 844	155 992	202 656
of which obligatory set-aside	68 258 38%	53 826 32%	28 796 19%	31 596 20%	67 591 33%
of which voluntary set-aside	111 262 62%	116 946 68%	123 048 81%	124 396 80%	135 064 67%
of which non food set-aside	1 584 1%	1 043 1%	287 0%	307 0%	669 1%

SCOP includes both professional and simplified schemes. Consequently obligatory set-aside percentage appears lower than the EU rate.

Source: MAF data collected for the study

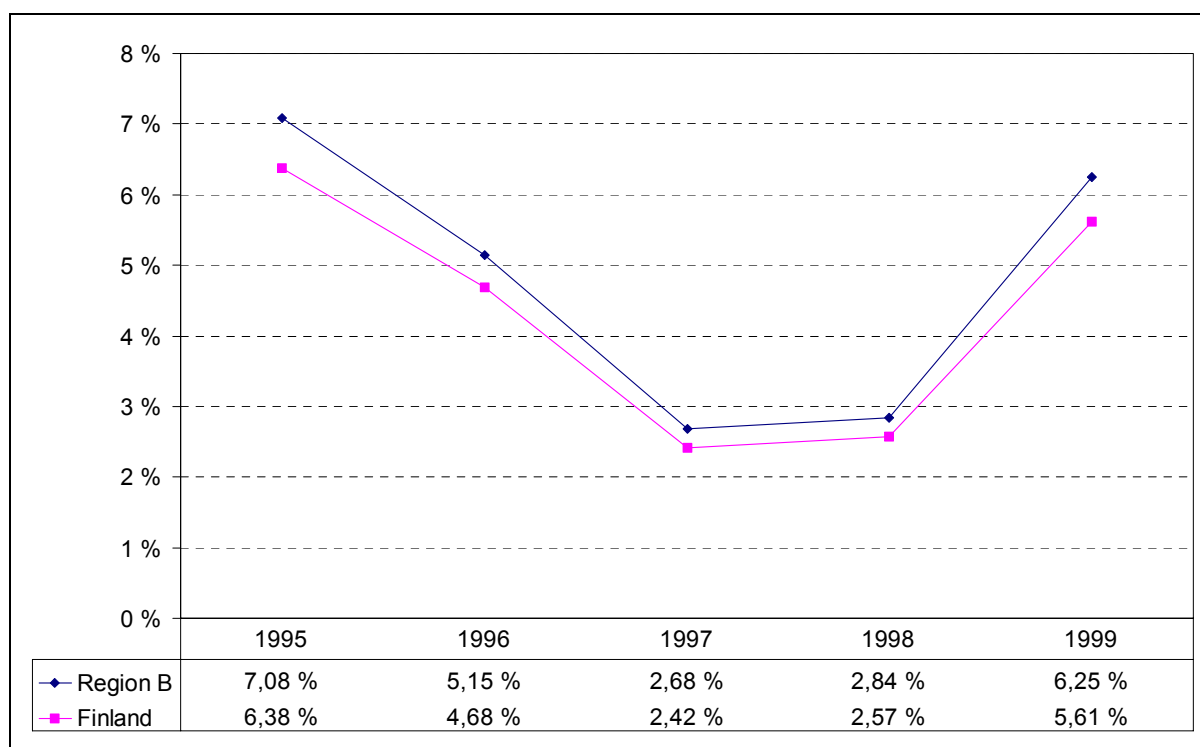
Table 4 Set-aside Granted in Region B 1995-1999

	1995/96	1996/97	1997/98	1998/99	1999/2000
Percentage of obligatory set-aside	12/17%	10%	5%	5%	10%
Number of COP applications	11554	11890	12046	11948	12380
SCOP + set-aside total	464914	484520	490083	506751	512536
SCOP + obligatory set-aside	420517	438747	442827	460344	461770
SCOP + voluntary set-aside	436402	462568	478397	493906	485066
Set-aside total /SCOP	18%	16%	14%	13%	18%
Obligatory set-aside/SCOP	7%	5%	3%	3%	6%
Set-aside total (ha)	71485	66816	58691	59012	77641
of which obligatory set-aside	27800 39%	21498 32%	11560 20%	12725 22%	27173 35%
of which voluntary set-aside	43685 61%	45319 68%	47130 80%	46287 78%	50469 65%
of which non food set-aside	713 2%	454 1%	126 0%	120 0%	298 1%

SCOP includes both professional and simplified schemes. Consequently obligatory set-aside percentage appears lower than the EU rate.

Source: MAF data collected for the study

Figure 8 Comparison of Set-aside Percentages (set-aside/SCOP total, between region B and the whole country)



Source: MAF data collected for the study

The average yields for which the regionalisation plan was based, is 2800 kg/ha in regions B and C1. For other production regions they were: A 3400 kg and C2-C4 2300 kg. The figures in Table 7 are not exactly the same ones that were actually paid. They represent the level presented in the annual MAF guidebooks for farmers. The amounts paid may have been slightly differed due to exchange rate changes (prior to euro) and fluctuations in world markets. However, the producers based their decision on the information below.

Table 5 Regionalisation Plan for Support Region B

Year	Cereals FIM/ha	€/ha	Oil FIM/ha	€/ha	Protein FIM/ha	€/ha	Set-aside FIM/ha	€/ha
1995								
1996	894	153	1717	294	1292	222	1133	194
1997	917	152	1760	260	1325	226	1162	198
1998	917	153	1567	262	1325	221	1162	194
1999	905	152	1614	272	1307	220	1146	193

€ refers both to Euro and ECUs.

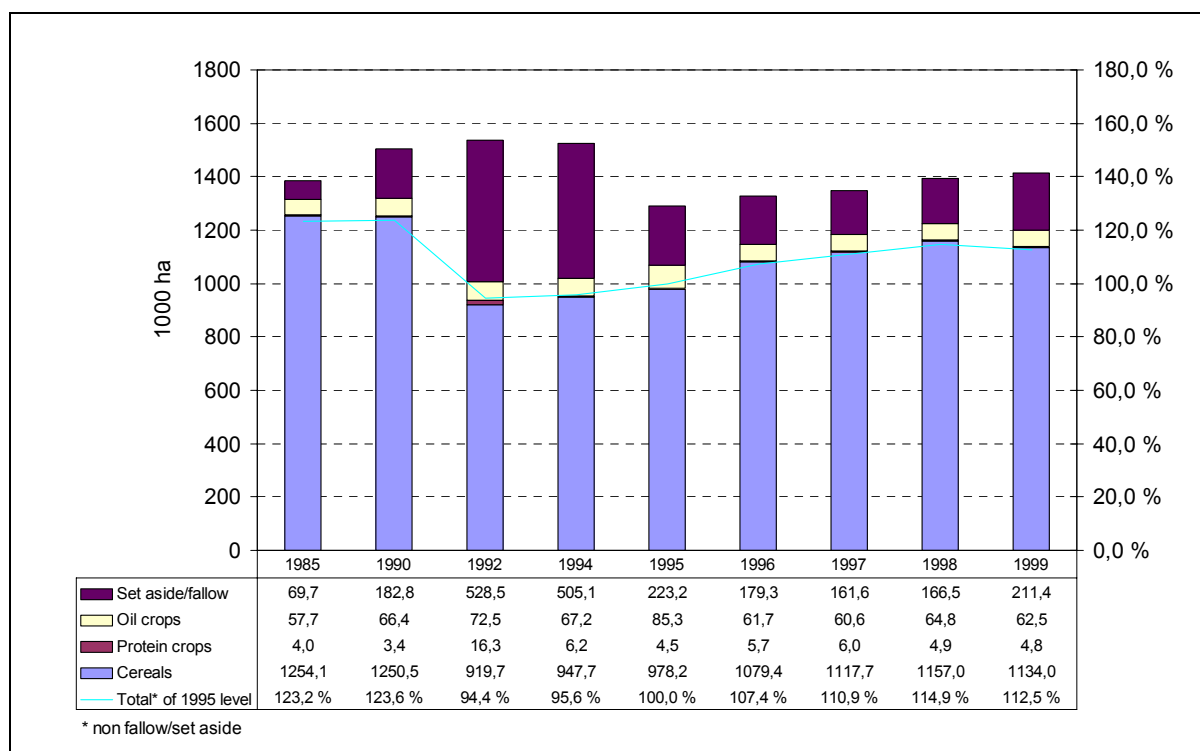
Source: MAF annual guidebooks

2. ELEMENTS OF RESPONSES FOR QUESTIONS 4.1.1 TO 4.2.1

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

In analysing the data on supply control, we need to again keep in mind the drastic change in agricultural policies that took place in 1995 when Finland joined the EU. It can be clearly demonstrated (Figure 9) that a notable reduction in production areas took place in early 1990's in anticipation of the changes in agricultural support policies. However, soon after the membership, areas began to increase again and have stabilised at a level of some 90% of the 1990 level. Most of the systematic change took place in cereal production. Fluctuation in oil seed and protein production areas were in relative terms wider and somewhat erratic.

Figure 9 COP Areas in Finland (1985-99)

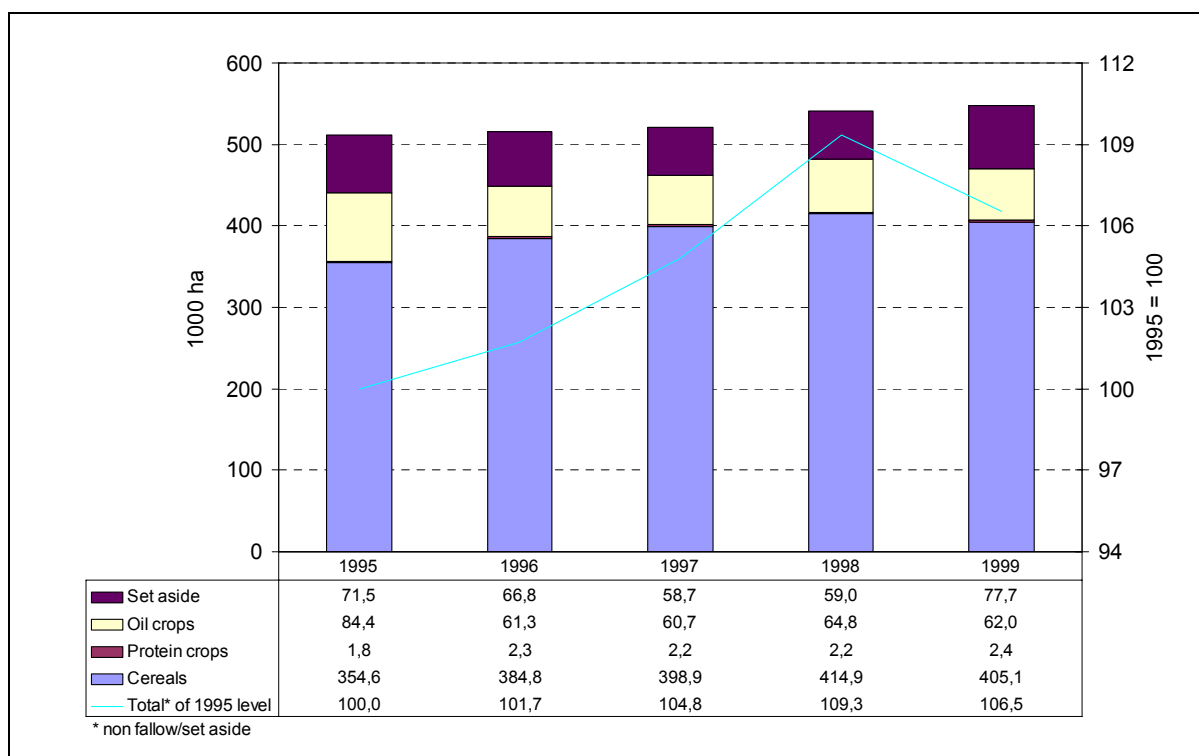


Source: Statistics Finland, annual agricultural statistics

Available data does not allow similar analysis at production area B level since such production areas were not defined in pre-accession era. However, in production area B the 1995-99 increase in COP

production areas was notably less dramatic than at national level. In 1995-99 the increase in production area was only 6.5% compared to 12.5% at national level (Figure 10).

Figure 10 COP Areas in production area B (1985-99)

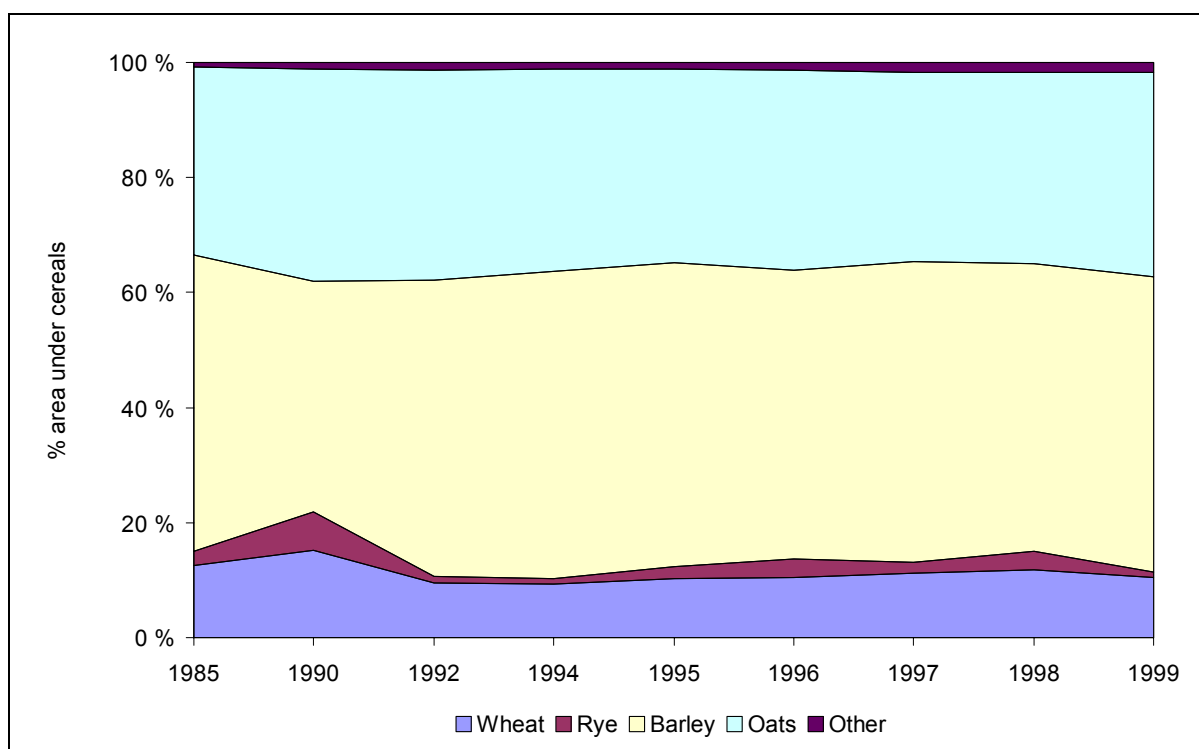


Source: MAF data collected for the study

The analysis above is based on the *total hectareage* under COP and does not incorporate any analysis of the productivity of the areas under cultivation or fallow. It may be estimated that the increased set-aside has actually reduced production volumes, at least a majority (73%) of the farmers interviewed declared that they have not changed their rotation after the implementation of the measure.

The set-aside has not had any notable impact on the structure of cereal production. Roughly one half of the area is under barley followed by one third under oat. Other crops, including wheat, take the remaining 13-17% of the area. It needs to be noted that maize is not – due to climatic reasons – cultivated in Finland; in 1999 it presented only 0.007% of cereal production land use, up from 0.001% in 1996. (Figure 11)

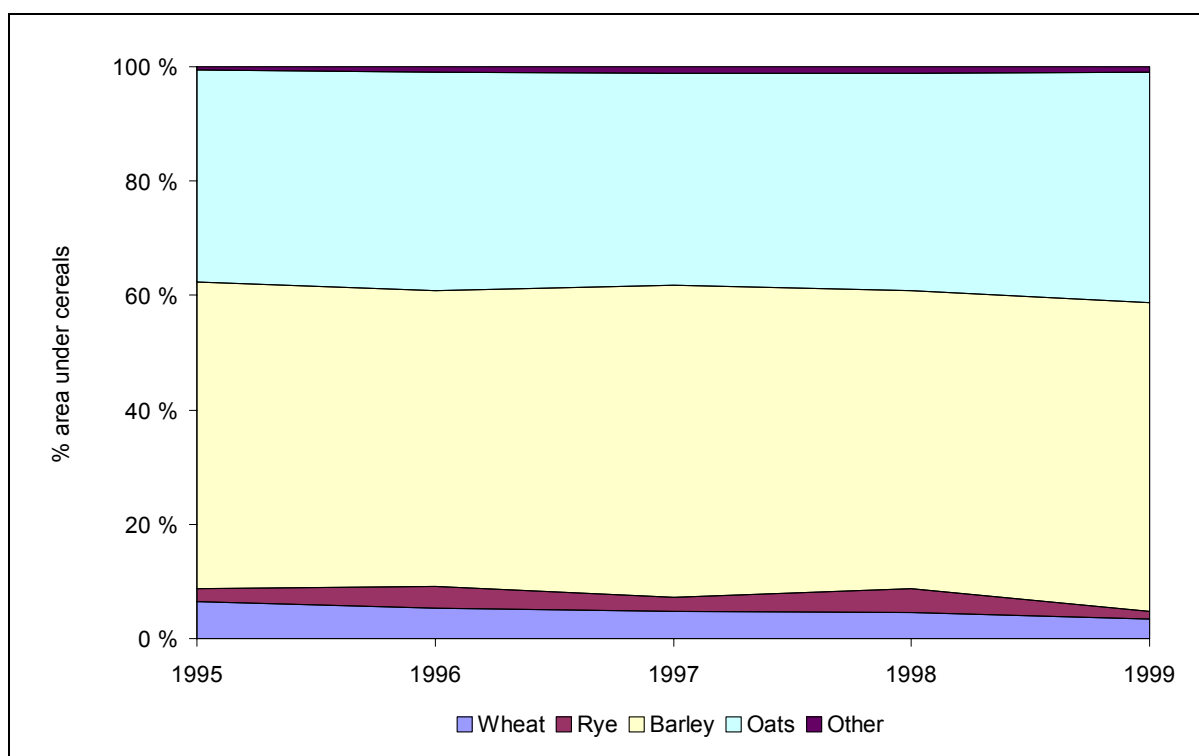
Figure 11 Cereal Production Composition (Finland, % of area)



Source: Statistics Finland, annual agricultural statistics

In cereal production there has been a notable change in 1995-99 in the production area B. During the five year period, wheat production areas decreased to almost half and its share shrank from 6.5% to mere 3.5% of cereals production area. Also rye production areas decreased by more than 30% during the era. (Figure 12)

Figure 12 Cereal Production Composition (region B, % of area)



Source: MAF data collected for the study

Some of the plots set-aside were small marginal fields that may have been left unplanted in any case or were of low yield. However, a majority of the farmers had rotational set-aside (67 % only rotational and 23 % both fixed and rotational). An estimated 72 % of set-aside land was rotational. This indicates that the issue of marginal lands may be of lower importance. This was confirmed by the regional authorities; there were cases of renting low yield plots for set-aside but this was not common.

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 which would have been unproductive in the event of absence of the measure.

This question may be best answered by using the farmers' interview data as well interviews of the regional authorities. As has been discussed before, area B is not a single administrative unit and therefore three separate regional authorities needed to be interviewed. Two out of the three subregions had had experience where low production, far located fields had been rented mainly for set-aside. These consist mainly small patches of cleared forest. For example, in Pirkanmaa region (around the city of Tampere) such fields were rented for as low rents as FIM 500/ha (€ 84) compared to FIM 4000/ha (€ 673) for high yielding fields near settlements. The officials interviewed had, however, the opinion that this phenomenon is relatively small and is mainly used in marginal cases only.

The farmers who had had voluntary set a side, were mainly motivated by various agronomic reasons (improvement of soil, organic agriculture, etc.). Their share was 37% of the farmers with voluntary set-aside. It needs to be noted that only 1/5 stated purely financial or economic reasons for voluntary set-aside.

Table 6 Reason for voluntary set-aside

Precaution in case you have penalties imposed for not respecting the compulsory requirements	Economic reasons	Reduction in labour availability or opportunities from reducing labour inputs sought	Opportunity to avoid renovating equipment or infrastructure	Other
– % of respondents –				
30	20	33	10	37

In the category "others" main reasons mentioned were various agronomic reasons ("improving soils", "rotation of low input agriculture", "weeds and noxious animals control", "organic agriculture", etc.).

In terms of the development needs of the set-aside system, it needs to be noted that almost a third had "involuntary" voluntary set-aside just to avoid potential penalties. This indicates that the system is not seen as easy to implement and that the penalties are harsh.

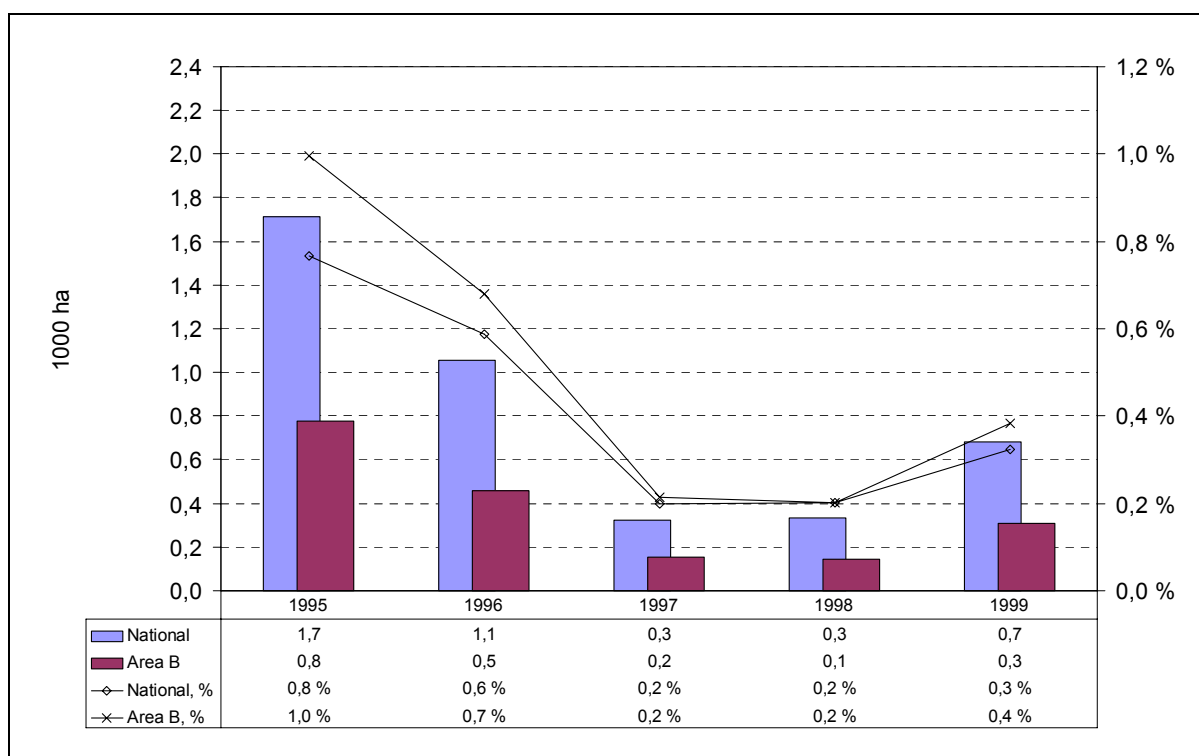
A majority of 60% of the farmers had always had voluntary set-aside.¹ The reasons for not previously setting aside voluntarily were mainly lack of appropriate fields, individualism, "no need for set-aside" and financial incentives.

4.1.3 To what extent was the set-aside instrument determining in the non-food crops production trend?

Non-food set-aside is negligible and does not show any particular trend neither at national nor regional level. At national level, it presents only 0.2-0.8% of the area set-aside and 0.2-1.0% at regional level. Well above 80% of the non-food set-aside in region B has been cultivated by non-food oil seeds. At national level the share is slightly less, still it is more than 70% in most years. (Figure 13)

¹ Some farmers interviewed may have confused pre-accession national activities and 1765/92 set-aside. Therefore responses reflecting long term developments need to be interpreted with caution.

Figure 13 Non-food Set-aside



Source: MAF data collected for the study

4.2.1 Is the budgetary cost of the instrument justified in relation to the noted effects? Estimate what it would be if the set-aside were not remunerated (countfactual situation 1). Estimate what it would be if the set-aside had been remunerated according to the original proposal of the Mac Sharry reform (countfactual situation 2). Estimate any different countfactual situation arising logically from the analysis tool used to the questions 4.1.

See consolidated EU report.

3. RESPONSES FOR QUESTIONS 4.2.2 TO 4.3.4

- 4.2.2 Is the impact of the compulsory set-aside rate and of the payment level on the large producers 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 4.1.1. The consultant will carry out then a synthesis at the Community level of the main conclusions.**

Some aspects of pre-1995 agricultural policies and set-aside in Finland

Finland and its agriculture suffered from cereal overproduction in the pre-EU membership period. In order to reduce the fiscal burden caused by the subsidised exports, among other measures, compulsory set-aside was introduced in 1991. The set-aside rate requested was, in 1994, 15% of the total field area. No compensation was paid. If the farmer did not have high enough set-aside, an *export payments levy* was collected. In 1994 its rate was FIM 1000 (ECU 162) per hectare in the *total field area*, not just the differential. Farms with less than 3 ha or with more than 85% under grass were exempt. Compulsory set-aside was also a precondition for some area based subsidies.

In addition to compulsory set-aside, additional areas were compensated. For areas above 15% but below 30%, the compensation was FIM 1800–2900/ha (ECU 292–471) depending on the area. For areas above 30% the rate was clearly less, only FIM 200–600/ha (ECU 32–97).

The pre-1995 set-aside may appear harsher to the farmer than the CAP set-aside. This may be the case if only set-aside is considered. However, with the introduction of CAP in Finland, the whole revenue structure changed. Prior to the membership, producer prices were negotiated between the State and the National Farmer's Union. The main objective was to compensate production costs and their increase. For much of a time market signals – let alone international markets – had very small impact on the prices paid to the farmers. Basically the system was based on rather similar approach as the labour market negotiations. These were often interlinked and the farmers' revenue levels were compared to those of the industrial labour force.

The system was completed by strict restrictions on food imports, subsidised exports, production quotas and penalties and levies for the farmers to participate in the fiscal burden caused by the mismatch between supply and demand. All this changed in 1995. Therefore, the impact of a single CAP measures (e.g. 1765/92) is cannot separated from the overall change in revenues that took place with the new policies. This is also reflected in the farmers' responses in the interviewed sample in region B.

Source: based on Kettunen, L. (1995): Finnish Agriculture in 1994

- Criteria

The concept of large producers was defined so that the large producers of a region cover 80% of the surfaces subject to the compulsory set-aside.

The choices of culture will be judged likely to answer better the requests of the market when:

- they were oriented to non surplus productions,
- they resulted in reducing the yields of the surpluses productions,
- they resulted in increasing the quality of the products,
- they were guided by a commercial strategy independent of the intervention.

- Summary

The threshold for "big farms" was set at 22 ha of COP. This group has 80% of arable land in Southern Finland. In the sample, this group has 13 farms out of the total of 30 farms. They have 74% of the total COP area held by the farmers interviewed. A majority of 69% of the large farm holders have adapted their production by reducing inputs and/or other cultivation methods to decrease costs and 15% by

buying arable land to meet initial croppable area. Only 8% of the big farm holders increased yields on the remaining part of their holding.

Revenues from COP production have declined since joining the EU due to drastic decline in producer prices. All large farmers had adapted their production structure to compensate for the loss. For others the situation was not similar as smaller farmers were not as adaptable and the share of reformers in the whole sample was only 77%. Half of the farmers interviewed had increased their non-COP production or non-agricultural revenues.

Participation in quality improvement schemes was concentrated on organic agriculture (38% of farmers). Other measures had been used only in individual cases.

Production of oversupply wheat declined drastically in region B. However, it was counterbalanced by increase in other regions making the national production increase.

Half of the farmers interviewed diversified to non-COP or non-agricultural production.

- Detailed analysis

The threshold for "big farms" was set at 22 ha of COP. This group has 80% of arable land in Southern Finland. In the sample, this group has 13 farms out of the total of 30 farms. They have 74% of the total COP area held by the farmers interviewed.

Revenue

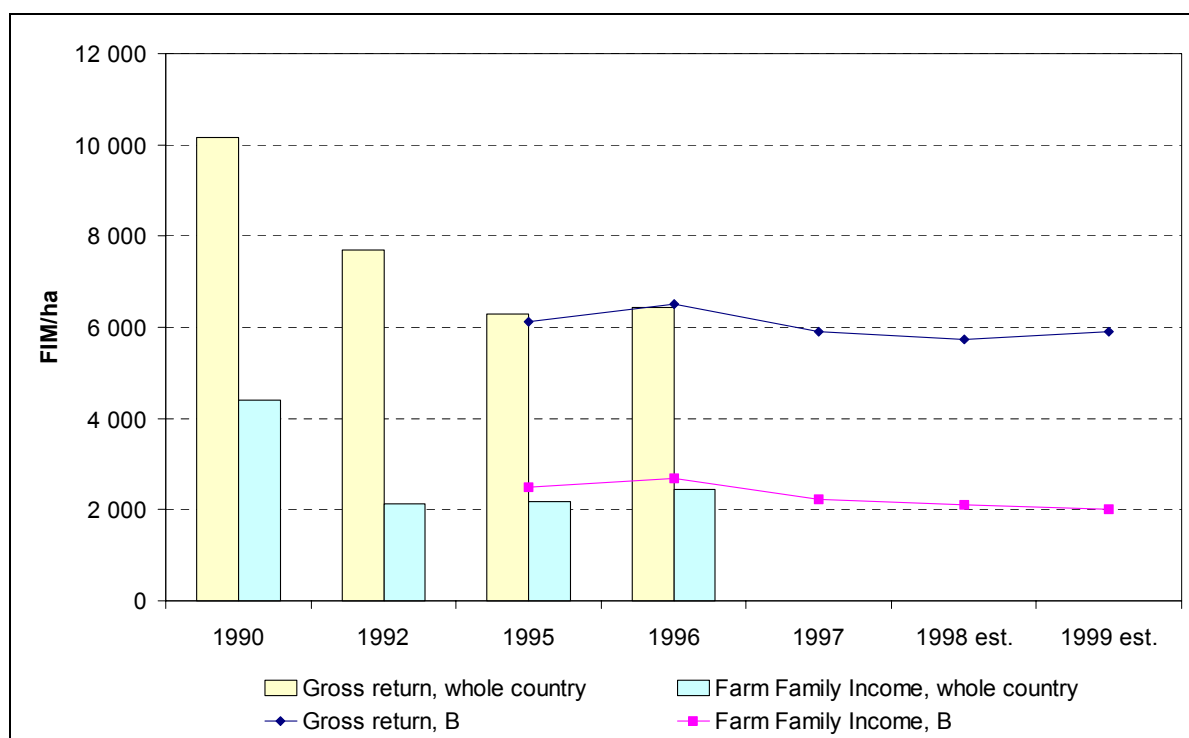
Most of all the farmers interviewed had suffered from a decline in revenues. The share of those who had seen declining revenues was 80% while the remaining 20% had not faced decline. The situation was even clearer among the big producers, 85% indicated decline in revenue. It needs to be noted that since set-aside has been fluctuating around 10% of the production area, it should not have a major impact. The overall level of subsidies should be of more importance.

Despite the decline in revenues, 80% of the farmers stated that CAP system is appropriate for their needs. There was no difference between large and small producers, in both groups the share was the same.

Only one third of the farmers interviewed thought that the main reason behind compensating for set-aside was to maintain farmers' revenue levels. As much as 73% saw it as a way of sharing the costs of set-aside while the remaining 27% saw it as a means to cut overproduction.

The total revenue of cereal farms has declined notably from year 1990. Data for years prior to 1995 are naturally not available for region B. However, based on comparison of national gross revenue figures in 1990-96 with those of region B in 1995-97, the "farm family incomes" declined to some 50 of their 1990 levels during the early years of EU membership. The data in Figure 14 is based on a selected sample of "accounting farms", i.e. a sample of large farms with more detailed accounting procedures than farms on average, a sub-sample of farms with cereals as their main product was used below.

Figure 14 Gross Revenues and Profitability in Cereal Production Farms



Source: Statistics Finland, annual agricultural statistics

In the whole sample, only 10% thought the subsidy level was adequate and the remaining 90% found it inadequate. Most of the farmers, 73%, thought that the set-aside subsidies were paid in order to participate in the management costs of the lands set-aside, 33% to maintain farmer revenues and 30% for other reasons – mainly to cut overproduction.

Production Structure

All (100%) the **large farm** holders have changed their choice of crops and activities in order to better maintain previous income levels. This was mainly done by (69% of cases) by reducing inputs and/or other cultivation methods to decrease costs. In 15% of cases it was done by buying arable land to meet initial croppable area. Only 8% of the big farm holders increased yields on the remaining part of their holding. 15% of the big farm holders rebalanced or changed cropping patterns in favour more profitable crops, such as silage grass, oil crops, turnip rape and non-food crops.

The situation in the **whole sample** was not quite similar. The share of farmers who had not changed their production system was as high as 23%. There was no systematic pattern how the structure had changed: 52% had reduced cereal production while 30% had reduced. Half (52%) of the farmers had diversified and increased their non-COP production. However, 17% reduced their non-COP to better concentrate on COP production.

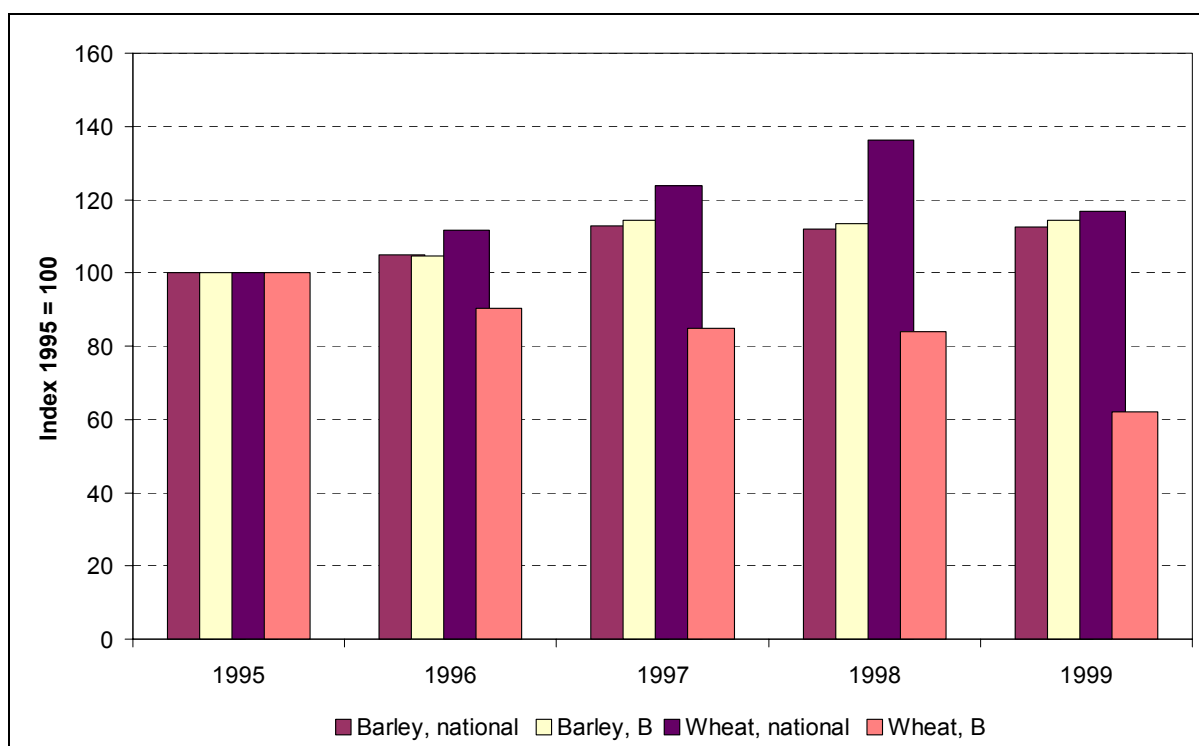
Based on the survey it appears that farmers have, after the drastic changes in administrative structures, changed their operations in a mixture of ways and that a stabilised *status quo* has not been reached.

Oversupply Products

In terms of wheat and barley production, CAP and set-aside has had an interesting impact. At national level production of both cereals has increased in 1995-99 some 15%. Barley production in region B has followed the same pattern and has actually increased slightly more than the national average.

As for wheat the change is by far more significant. Despite the national increase, in region B wheat production has declined by 38%. Since wheat is grown here at its northern edge, the changes in subsidy pattern has made it more profitable to switch to other cereals than wheat.

Figure 15 Cereal Production Volumes 1995-1999, index



Source: Statistic Finland

Improved quality of products

Slightly more than one third (38%) of the large farms improved the quality of their products by switching to low input or organic agriculture. The respective share in the total sample is less, only 23%. None of the large farms (one in whole sample) participated in chain-of-custody systems and one (only one in the sample) on quality management systems.

Market Demand

Market signals did not have a major impact on farming decision until 1995 and introduction of CAP in Finland. The farming patterns learnt during the pre-membership era may be rigid to change and therefore changes take place slowly. However, profitability was mentioned by 43% as the most important factor in production strategy followed by ease (27%) and agronomic reasons (23%). In listing the second most important factor, the shares were 43%, 27% and 20% respectively. 10% stated environment as the second most important factor. In total 87% declared profitability as a notable factor in production design. The results, however, do not indicate how the concept of *profitability* is interpreted by the farmers and if it is based on market demand, estimated net revenue or some other, more vague concept of profitability.

Slightly more than half of the farmers interviewed had increased their non-COP agricultural production or other, non-agricultural revenues.

Table 7 **Change in production pattern**

Change	Reduction in non-COP agricultural production or other production	No change or change within COP production	Increase in non-COP agricultural production or other production
Percentage in the sample	20%	27%	53 %

Structural adjustment in the Finnish agriculture is still an on-going process. Many of the Finnish farms still have not gone through specialisation and have a mixture of cereal and vegetable production as well as animal husbandry. This is demonstrated also in the sample. The average area of agricultural land was 46 ha and out of that, only half was used for COP production. The rest was for fodder and vegetables. Many farms had also dairy cattle. This was a way of adjusting production. Some farmers sought additional revenues from cattle to compensate for the loss of revenue while some specialised in COP and gave up animal husbandry totally. The latter option needed to be used also if additional revenues were sought by off-farm employment.

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?

- **Criteria**

The surfaces set aside in compulsory set-aside on the one hand and involuntary set-aside on the other hand, were used in the rotation of the crops, by more than 50% of the farmers surveyed, to improve the agronomic results of the following crops.

- **Summary**

Council Regulation had only small impact on rotation methods. Three quarters of farmers in the sample had not changed their rotation pattern. The trend is confirmed by the regional authorities. Set-aside areas were mainly kept bare or under vegetation.

For a majority of farmers (44%) rotation methods used had positive impact since their set-aside was rotational. For the remaining farmers it was either neutral (37%) or negative (20%).

The impact of set-aside on rotation was limited. In the sample 73% of the farmers had not changed their crop rotation pattern after the obligatory set-aside came into force.

The approaches on set-aside management were varying: 67% of the farmers practice purely rotational set-aside and 10% purely fixed set-aside. 23% of the farmers practice both set-aside types. However, 72% of the farmers practice *mainly* rotational set-aside. The reasons for practising rotational set-aside are e.g. (a) improvement of field, (b) soil improvement, (c) weed control, and (d) favouring organic agriculture.

One half (50%) of the farmers interviewed had sowed plants for agronomic aims to cover set-aside areas not under non-food crops and 53% favoured bare set-aside. Only 10% of farmers kept the land in question under natural grass.

On non-cultivated set-aside areas the mowing of vegetation has been used by 77% of the farmers. The removal of all cover as a management system had been used by 37% of the farmers.

Chemical herbicides had been used by 30% of the farmers. Other management systems used comprise harrowing and willow removal (in ditches).

According to the regional authorities no significant changes on crop rotation have been occurred as a result of obligatory set-aside.

Table 8 Impact on rotation pattern

	Poor impact	Neutral	Positive impact
share of respondents	20 %	37 %	44 %

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

- Criteria

The location of the plots set-aside in holdings encouraged better cultivation methods: the agronomic, economic or environmental gains are more important than the losses. The impact is analyzed at two levels: within the set-aside framework and within general framework.

- Summary

Set-aside is dominated by rotational set-aside which has an equal impact on all fields. Therefore it has a neutral impact in both economic and agronomic terms. In most cases, due to rotational set-aside, impact has been neutral both in agronomic and economic terms.

The selection of set-aside plots has had a small positive impact. Fixed set-aside is often carried out in small and isolated plots where production costs are higher. This has a tendency to improve *average* profitability of production. In few cases set-aside plots have been located on poor and marginal lands. This has increased also the average yields.

The analysis is carried out within the framework of set-aside. A vast majority of farmers have suffered a loss in revenues with the introduction of CAP. As has been discussed in several occasions, this likely includes *all change in revenue* after CAP and does not separate set-aside from other measures. Compensation for set aside may have actually increased after CAP, but this has not been able to compensate for other revenue loss.

- Detailed analysis

This is a very complicated question to answer. As stated above, the Finnish agriculture went through a major restructuring in 1995 with EU membership. After that the farmers were optimising the operations under a whole new set of incentives. Impact of a single measure could not be identified by the farmers interviewed. Particularly the impact of set-aside on the economic performance of the farms cannot be identified separately from other measures – both community and national – in agricultural support.

Table 9 Location of Set-Aside

Use of rotational fallow system	Along water courses to avoid erosion and leaching of nitrates	On small lands	Distant or isolated fields	Least fertile or non - irrigated fields	Sloping fields	Extens. cultivated field or margins	Acquisition of fields specific. to be set-aside	transfer of set-aside oblig. to another holding	other
– % of respondents –									
80%	3%	17%	13%	17%	0%	0%	0%	Not allowed in Finland	13%

As can be seen from the total of 143% in Table 9 farmers have multiple criteria in selecting their fields for set-aside. In the assessment of the impact of set-aside on agricultural performance, a subjective judgement on the *main* criteria was made. The criteria for the assessment are presented in Table 10.

Table 10 Criteria of Analysis in Economic and Agronomic Situation

	Use of rotational fallow only	Location of fallow along water courses to avoid erosion and prevent nitrate leaching	Location of fallow on small, distant or isolated fields	Location of fallow on marginal, sloping, non-irrigated fields/parcels or around field margins
Choices made by farmer	20 (67%)	1 (3%)	4 (13%)	5 (17%)
Impact on the economic balance sheet	Neutral	Losses due to abandonment of good soils	Positive due to lower production costs	Increase in average profitability across holding
Impact on the agronomic balance sheet - not including environment	Neutral	Losses or neutral impact on holding land quality	Neutral (or positive due to improved yield)	Positive due to morphed yield

Most of the farmers practised rotational set-aside. Selection of fixed set-aside plot has been distributed almost equally between small plots, distant or isolated plots and poor soil. Other factors did not have that much importance. Therefore it may be estimated that set-aside had slightly positive impact on the agronomic performance of farms. We may assume that on average the impact of rotational set aside is neutral; both poor and good soils are effected equally. There is no information on the quality of small or distant plots. They may often be of lower production capacity than other fields. In the analysis it is, however, assumed that their average potential equals all the other fields and the decision to include them in set-aside is made on production cost grounds.

As for economic performance, the set-aside has had more positive impact that from agronomic perspective. Production costs in far away field are higher thus making them less profitable. Therefore the total impact has a slightly more favourable tone than in agronomic terms.

Table 11 Impact of Set-aside on Agricultural Performance

	Gain	Neutral	Loss
	– % of farmers –		
Economic	30	67	3
Agronomic	17	80	3

The economic gain is measured in relative terms within the framework of CAP subsidies. 80% of the farmers interviewed stated that they had suffered loss after the introduction of the Community subsidy system. Results in Table 11 indicate that 30% of farmers have been able to lessen the negative impact of CAP and set-aside in their management systems compared to *management-as-usual*-scenario under set-aside. However, even they have suffered from loss of revenue in absolute terms. This was demonstrated in Figure 14 page 17.

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

- Criteria

The average yield of the arable lands (out of set-aside) for farms surveyed is rising stronger during the period 1995–1999 than over the period 1990–1994.

- Summary

Only 7% of the farmers had increased inputs on the remaining part of the holding in order to reach the pre-CAP yields after the adoption of set-aside.

The average yield has decreased in both pre and post-accession periods in the sample regions of Pirkanmaa and South-East Finland (Kaakkois-Suomi development center). The decrease of average yields in the latter period has been slower in South-East, but Pirkanmaa the decline accelerated. This may have two main reasons behind it: a) the time series are much too short to make any firm conclusions, or b) the structural adjustment in the Finnish agriculture is still on-going.

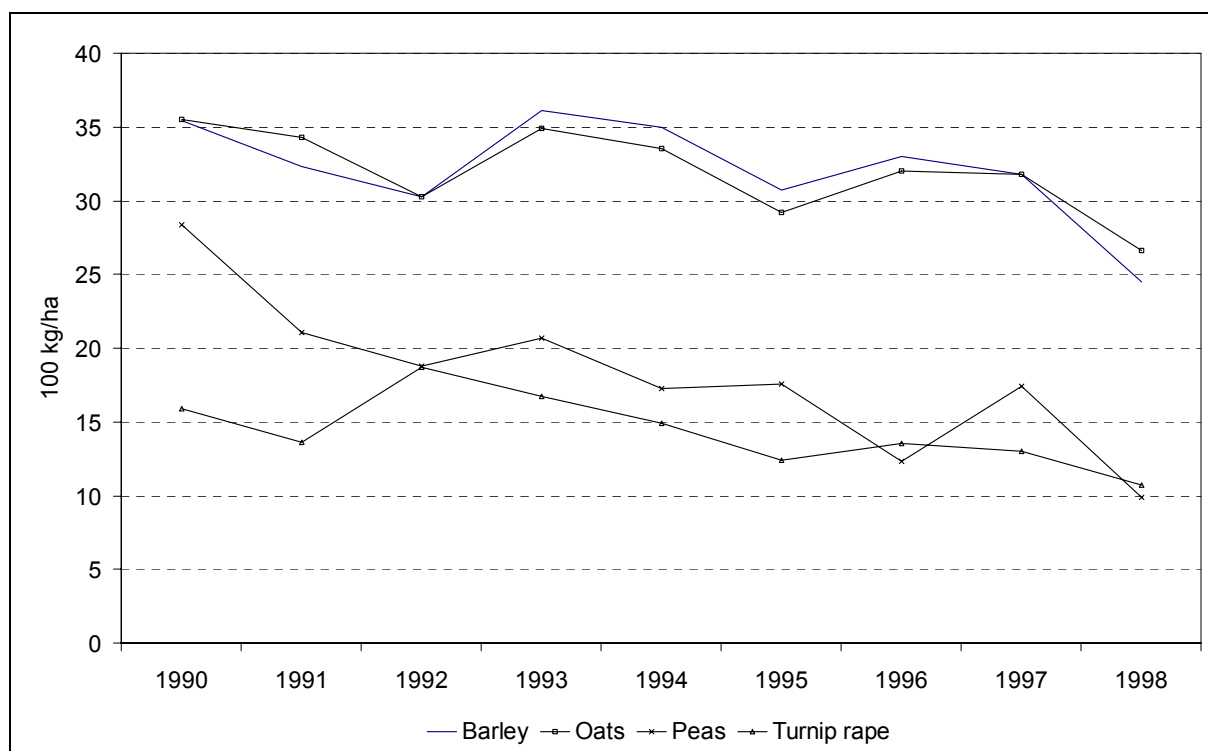
- Detailed analysis

Only 7% of the farmers had increased inputs on the remaining part of the holding in order to reach the pre-CAP yields after the adoption of set-aside.

The regional statistics on the average yield were only available for separate individual cereals (barley, oats, wheat and rye), peas and turnip rape. However, as the COP production in Finland consists mainly of barley and oats, peas and turnip rape, it is justified to take their yields as example in the analysis for this question.

The average yield of some COP species in Pirkanmaa region for 1990-1998 is shown in Figure 16. It can be noted that the average yield of cereals and turnip rape has declined more in the 1995-1999 period than in the 1990-1994 period. The average yield of peas has decreased equally in both periods

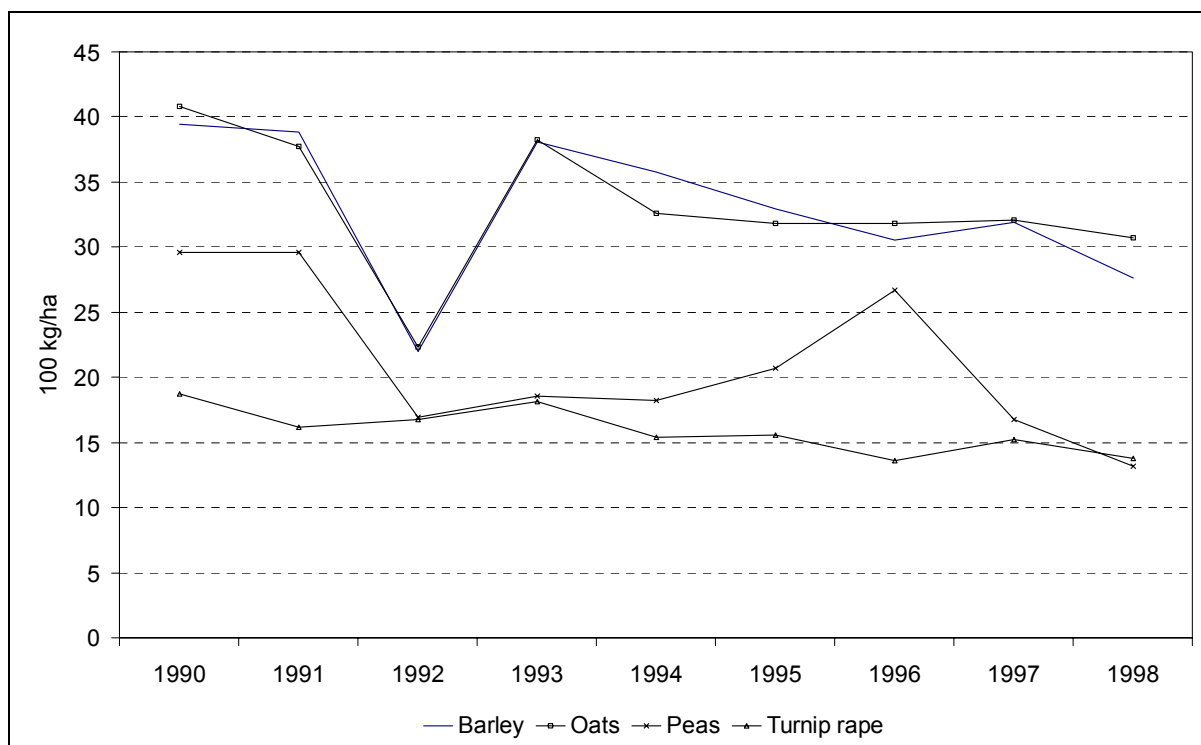
Figure 16 Average yield of barley, oats, peas and turnip rape in Pirkanmaa 1990-1998



Source: Statistics Finland, annual agricultural statistics

In the South-East, yields have had wide fluctuation in some individual years. However, otherwise the decline has been rather slow but constant. (Figure 17)

Figure 17 **Average yield of barley, oats, peas and turnip rape in South-East Finland 1990-1998**

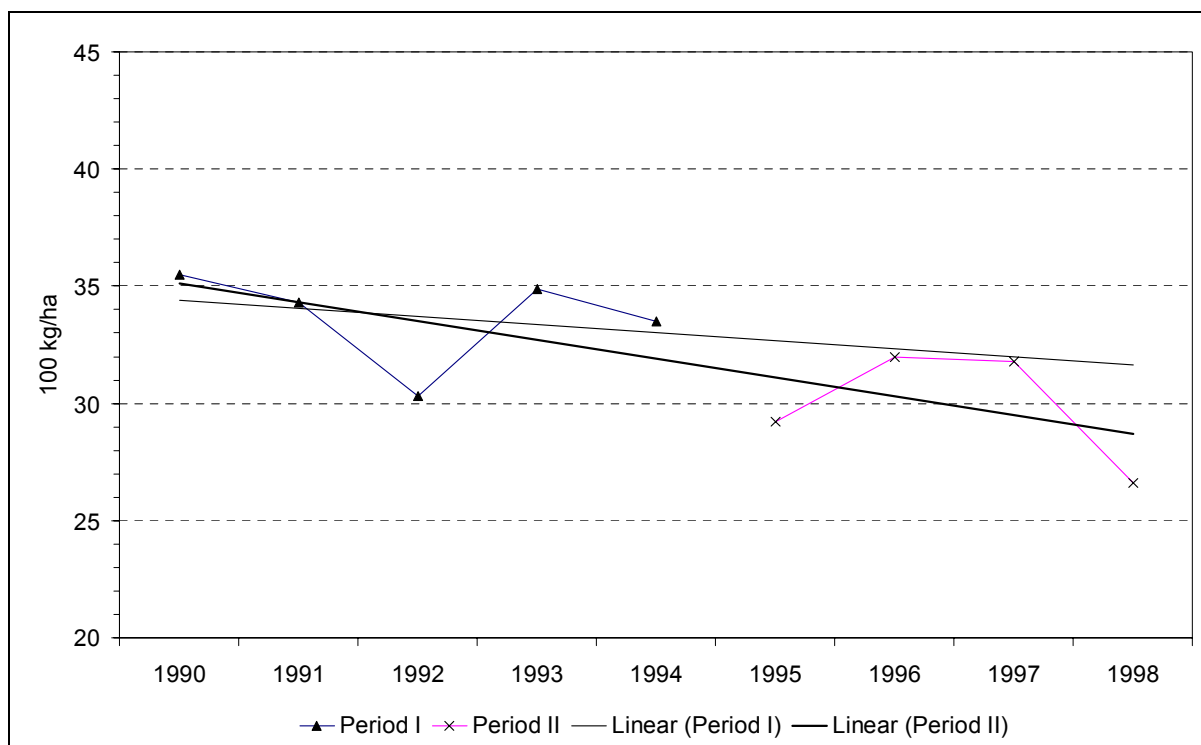


Source: Statistics Finland, annual agricultural statistics

In analyzing the trends in oat yields (Figure 18 and Figure 19) the following conclusions can be drawn:

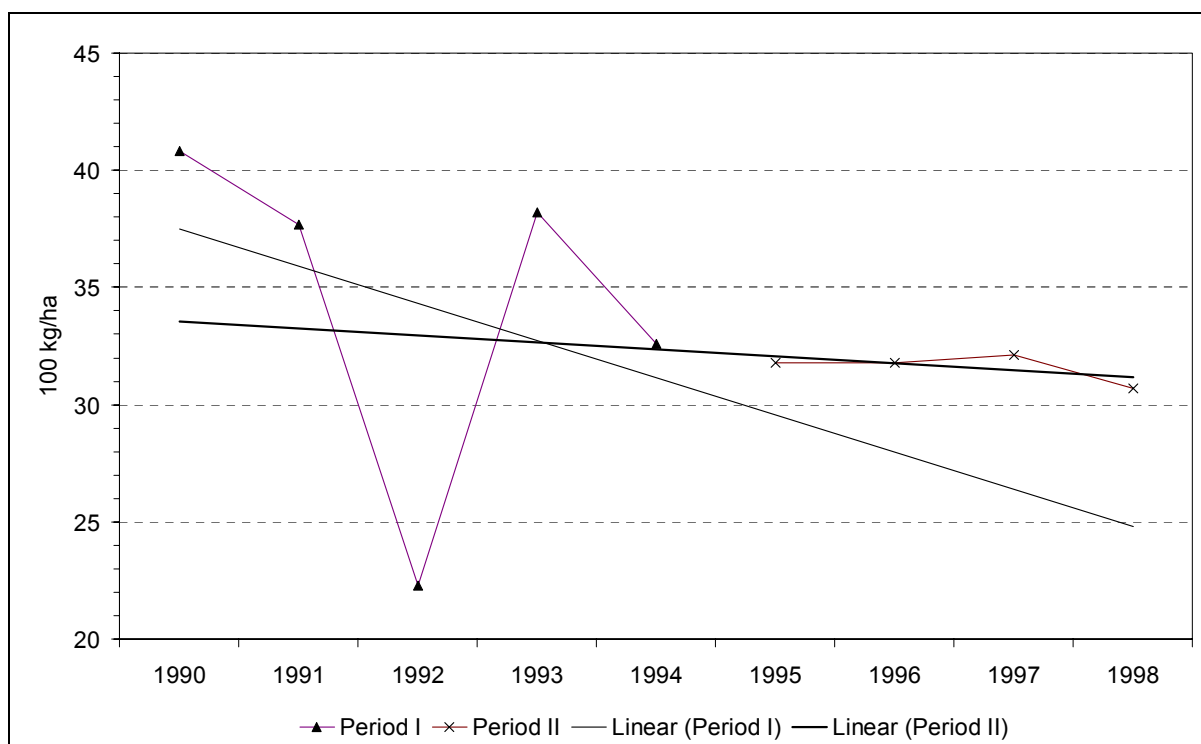
- the average yield has decreased in both periods in Pirkanmaa and South-East Finland
- the decrease of average yield in the latter period has been slower in South-East Finland, but faster in Pirkanmaa

Figure 18 Trends in average yields of oat in 1990-1994 (period 1) and 1995-1998 (period 2) in Pirkanmaa



Source: Figure 16

Figure 19 Trends in average yields of oat in 1990-1994 (period 1) and 1995-1998 (period 2) in South-East Finland



Source: Figure 17

This indicates that there is still an on-going process of restructuring and realignment in the Finnish agriculture. Production strategies are redesigned and the most profitable ways of production are looked for. On the other hand, since farm production is subject to natural fluctuations, particularly the post accession the time series may cover too short a period to make firm make any conclusions.

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)

- Criteria

The size of holdings surveyed increased more quickly from 1995 to 1999 than over a previous period. The competition on the land, in the surveyed holdings vicinity, increased quickly from 1995 and land was not readily available.

- Summary

The size of holdings surveyed increased more quickly from 1995 to 1999 than previously. This can also be concluded on the basis of regional data obtained. Almost half of the farmers interviewed had faced difficulties to find arable land to buy or rent since 1995 (compulsory set-aside introduction).

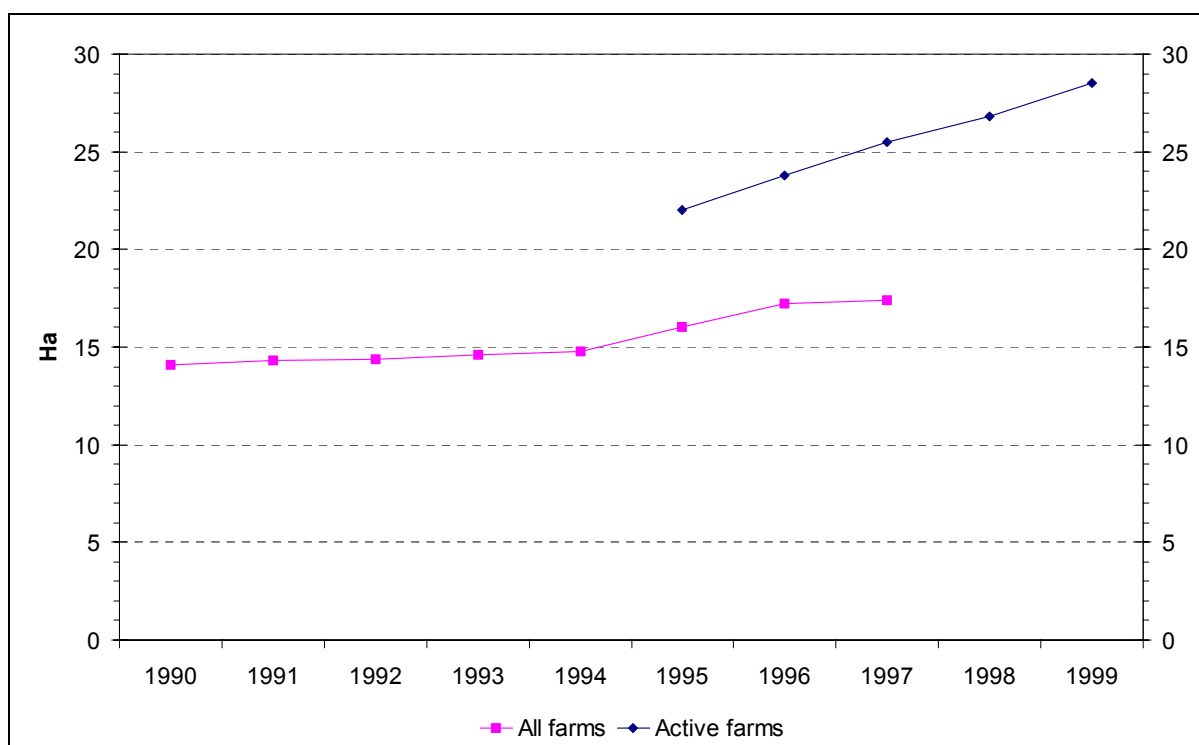
- Detailed analysis

Pace of farm size rationalisation in the sample has increased from pre-accession period. In 1985-1995 53% of farms had obtained additional land. In the latter period 1995-99 slightly less (50%) had obtained additional land. However, the pace increased. In the earlier period average additional land was only 15 ha while in the latter it was 24 ha.

The change is also reflected in regional data. For example in Pirkanmaa region (according to the regional authorities) the average size of active farms increased quite linearly from 22 ha in 1995 to 29 ha only four years later in 1999.

There is no separate data available for the development of the average size of *active farms* in the period before 1995. However, pre-1995 data is available is for *all* farms. The increase in the average size of all holdings was rather slow until 1995. After that a drastic change took place and the average sizes of both all farms and active farms increased rapidly. (Figure 20)

Figure 20 Development of average farm size in Pirkanmaa in 1990-1999



Almost half, 43% of the farmers interviewed had encountered difficulties in finding arable land to buy or rent since 1995; 46% of them said that the difficulties to find arable land are caused by set-aside. However, 63% of the farmers expressed that the market for arable land has not increased since CAP reform in Finland (i.e. since 1995).

Some farmers interviewed (20%) had bought more arable land to reach their pre-CAP croppable area. 57% had reduced costs by decreasing production inputs. Some 20% rebalanced or changed cropping patterns by favoring more profitable crops, such as potato, caraway, flax, silage grass, oat and barley, oil crops, turnip rape, root crops and non-food crops. Other means for adaptation mentioned by farmers (13%) include (a) increasing set-aside area, (b) renting fields, (c) discontinuing with dairy cattle, and (d) general rationalization of production.

The change in agricultural policies has had an impact on the price of land. The actual land prices depend on a large number of factors. Price of land purchased by the state declined by some 50 % in early 90's in anticipation of EU membership and severe economic depression Finland went through. During the first years of the membership, prices stabilised and started to increase. (Table 12)

Table 12 Land price in voluntary sales to the State (whole country, 1982-1997)

Year	1982	1985	1990	1992	1994	1995	1996	1997
FIM/ha	8 410	10 184	19 496	15 120	9 296	10 300	10 900	12 500

4. RESPONSES FOR QUESTIONS 4.4.1 TO 4.4.4 RELATED TO THE ENVIRONMENTAL IMPACTS

The **criteria** for environmental analysis were the same in each sub-issue. The share of farmers with good, neutral or negative approaches indicates the impact. The results are compared to the participation in other environmental management programs. The national regulations on the management of set-aside lands have little requirements related to environmental impact. The regulations are presented in more detail in Annex 2 on the national issues.

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

• Summary

Set-aside has had small impact on soil management. Erosion is not an issue in Finland and most management problems have been related to weeds. Set-aside is mostly practised in a rotational manner which should have positive soil management characteristics.

The national regulations had minor technical instructions on soil management.

• Detailed analysis

The scientific evidence on the relation between soil management (or improvement) and set-aside will be analysed separately. The farmers in the sample had an average set-side rate of 18% while the regional and national figures were 15% and 16% (average rate 1995-99), respectively.

When based on few selected criteria, the farmers in the sample did not appear very progressive in terms of soil management: 40% had had management regime that may be classified as negative while a similar percentage had positive aspects in their soil management. For the remaining 20% no specific impact could be identified.

Table 13 Soil Management

Type of behaviour	Negative	Neutral	Positive
Examples of types of practice linked to soil management allowing classification	<ul style="list-style-type: none"> - Bare set-aside or poor cover - Application of pesticides on non cultivated set-aside land 	<ul style="list-style-type: none"> - Cultivation of set-aside land for non-food use - Correct management of set-aside - Fixed set-aside in areas without erosion risk 	<ul style="list-style-type: none"> - Sowing of plants enriching set-aside lands - No pesticide use - Fixed set-aside on areas susceptible to erosion - Long term planting (forestry) - Farmer participating elsewhere in agri-environment measures to protect soils
Classification of farm according to most common practices	12 (40%)	6 (20%)	12 (40%)

This result is somewhat in conflict with the opinions presented on the problems caused by set-aside. Prior to set-aside, 70% of the farmers had not had difficulties in the management of fallow and currently the share has increased to 73%. Practically all those who had had difficulties had them with weeds (89% pre-set-aside and 100% post) while there were no mention of problems with erosion or diseases in either period. Pests, abandoned appearance and mismatch of growing and administrative periods had been observed in individual cases.

The relatively low occurrence of soil management problems may be contributed to the high occurrence of rotational set-aside. Only 10% did not implement rotational set-aside, while 67% had purely rotational. In selecting their fixed set-aside plots, 17% had selected areas with poor soil and 7% over utilised plots.

Most (83%) of the farmers participate in agri-environmental programmes, and 60% of them in programmes related to soil protection.

According to the regional interviews, the set-aside has not been a cause of unexpected environmental impacts.

The national regulations had a general requirement of good soil management. The management of bare set-side had to be carried out in a manner which does not lead to erosion.

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)?

- Summary

Set side can be estimated to have had a small specific impact on waters. Much more can be impacts has been caused by a) other, national water protection measures both in subsidies and normative framework and b) the overall decline in herbicide and fertiliser use.

The instructions on the management of set aside in terms of water protection where minimal; bare set-side could not be located as stripes round fields as this could have led to flow of nutrients from the fields.

- Detailed analysis

It needs to be noted that as discussed in Chapter 1.1.4, irrigation is not an issue in Finland. Not a single farmer interviewed did irrigate their set-aside. Since a vast majority of farmers had mainly rotational set-aside, the share if farmers who had selected their set-aside plots specifically along waterways is small, only one farmer (3%) had specifically selected plots by the river or lake.

Table 14 Impact on Water Management

Type of behaviour	Negative	Neutral	Positive
Examples of types of practice linked to water management allowing classification (to be validated by interviewer according to dominant characteristics of farming in the region)	<ul style="list-style-type: none"> - Application of pesticides or nitrates on uncultivated set-aside land - Irrigation of set-aside land 	<ul style="list-style-type: none"> - Cultivation of set-aside land for non-food use - Correct management of set-aside 	<ul style="list-style-type: none"> - fixed set-aside in humid zones and along water courses - Sowing of plants enriching soils on set-aside land - No irrigation of set-aside land - No usage of pesticides on set-aside land - Farmer participating agri-environmental measures elsewhere to protect water
Classification of farm according to most common practices (single category)	10 (33%)	10 (33%)	10 (33%)

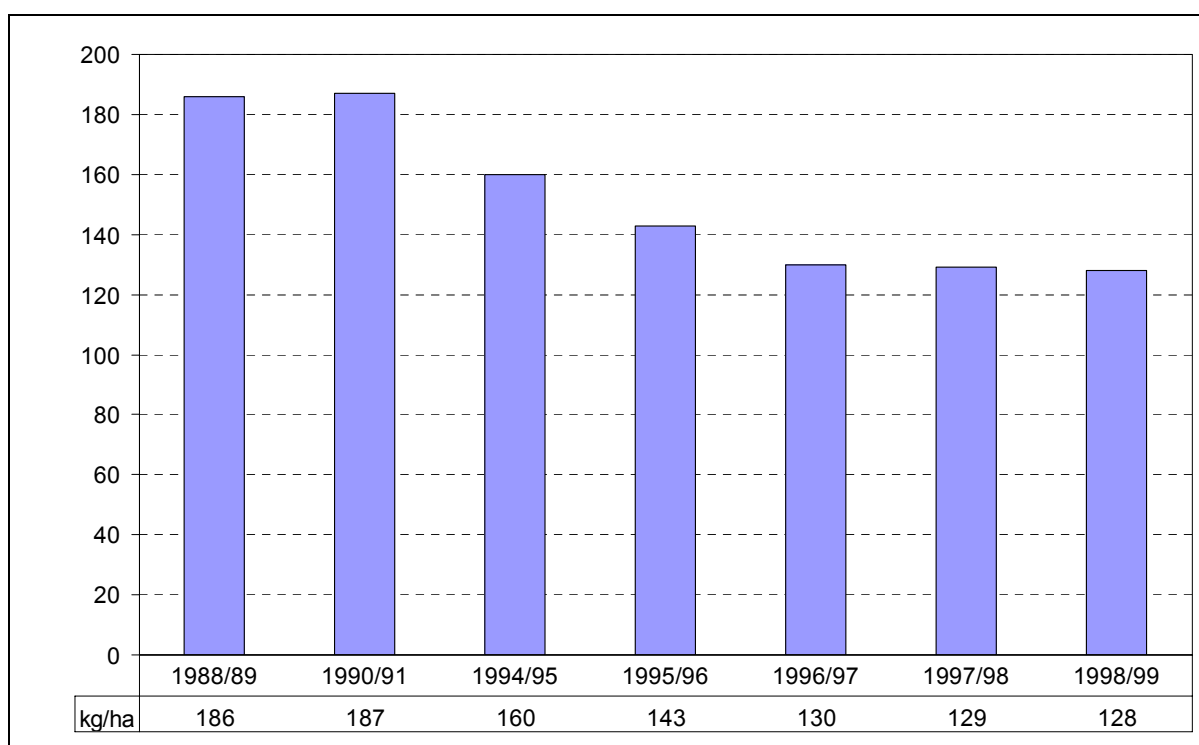
Water management is carried out mainly by participating in agri-environmental activities in water protection. As agriculture has become the main cause of diffuse loading in rural areas, there are incentives granted to promote water protection. Most (83%) of the farmers participate in agri-environmental programmes, and 76% of them in programmes related to water protection.

None of the farmers have had any erosion problems in set-aside management before or after the compulsory set-aside.

Most impact on water management has been caused by the decline in fertiliser use. There has been a general decline inputs in agriculture. In the sample, 57% had reduced input use to compensate the decline in revenues. This can be demonstrated by the average fertiliser use per hectare. It has reduced from 143 kg/ha to 128 kg/ha in 1995-99. Prior to the EU membership and CAP the rates were even

higher. This was concurrent with the change in subsidy structures from *production based* subsidies to *area based* subsidies when Finland joined EU. (Figure 21)

Figure 21 Fertiliser Use 1988/89-1998/99 (whole country, kg/ha)



Source: Statistics Finland, annual agricultural statistics

National regulations on the management of set-aside had few issues related to water management. The use of fertilisers was not allowed which has a positive impact on waters. Bare set-side could not be located as stripes round other fields as this could have led to flow of nutrients from the fields.

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

- Summary

The responses indicate that the methods used may have had negative impact on landscape management. Half of the farmers used bare set-aside. The perception by both the farmers themselves and the regional authorities was, however, different. In the interviews, there was hardly any mention of the lands having abandoned appearance. Only 13% of farmers themselves thought that the landscape deteriorated while no one had received negative comments from their neighbours.

There were no national instructions related to landscape management.

- Detailed analysis

A small majority of farms had set-aside management with poor landscape management characteristics. This may be contributed to a large extent to the fact that 16 of the 30 farmers had had bare set side-aside.

Table 15 Impact on Landscape Management

Type of behaviour	Use of set-aside land with change of practices having a predominantly negative impact on the landscape	Use of set-aside land practices having no effect on the landscape
Examples of types of practice linked to landscape	Bare set-aside Poor management of set-aside (fallow) Strong concentration of set-aside lands in a single zone	Well managed set-aside Cultivated set-aside
Farmers interviewed	16 (53%)	14 (47%)

However, the situation may be less dramatic than the comparison indicates. Two thirds of the farmers indicated that the areas did not appear that different from the surrounding landscape, while the remaining third agreed with the statement. However, the difference was not necessarily a negative one; only 13% stated that they had problems with abandoned appearance of their set-aside.

Almost all (90%) of the interviewed farmers said that their neighbours had not commented the landscape. This can be explained by the fact that all (100%) farmers had been able to scatter the set-aside in a manner which did not create large tracts of abandoned farmland.

Most (83%) of the farmers participate in agri-environmental programmes. However, only 32% of them in programmes related to landscape protection.

The farmers' personal observations were confirmed by the regional authorities interviewed. None of the administrative units reviewed declared that set-aside would have had major negative impact on landscape management. However, one out of the three regional offices considered that the set-aside fields have both negative and positive (honey flower fields) effect on landscape. It also needs to be noted, that most of the farmers practice rotational set-aside which means that impact of the measure on a single plot is not permanent.

There where no national instructions related to landscape management.

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

- Summary

Set-aside, how it was practised, did not have an impact on biodiversity management either way. The actions taken did not specifically promote biodiversity as only 10% used natural revegetation. However, nor did set-aside have specifically negative impact on biodiversity.

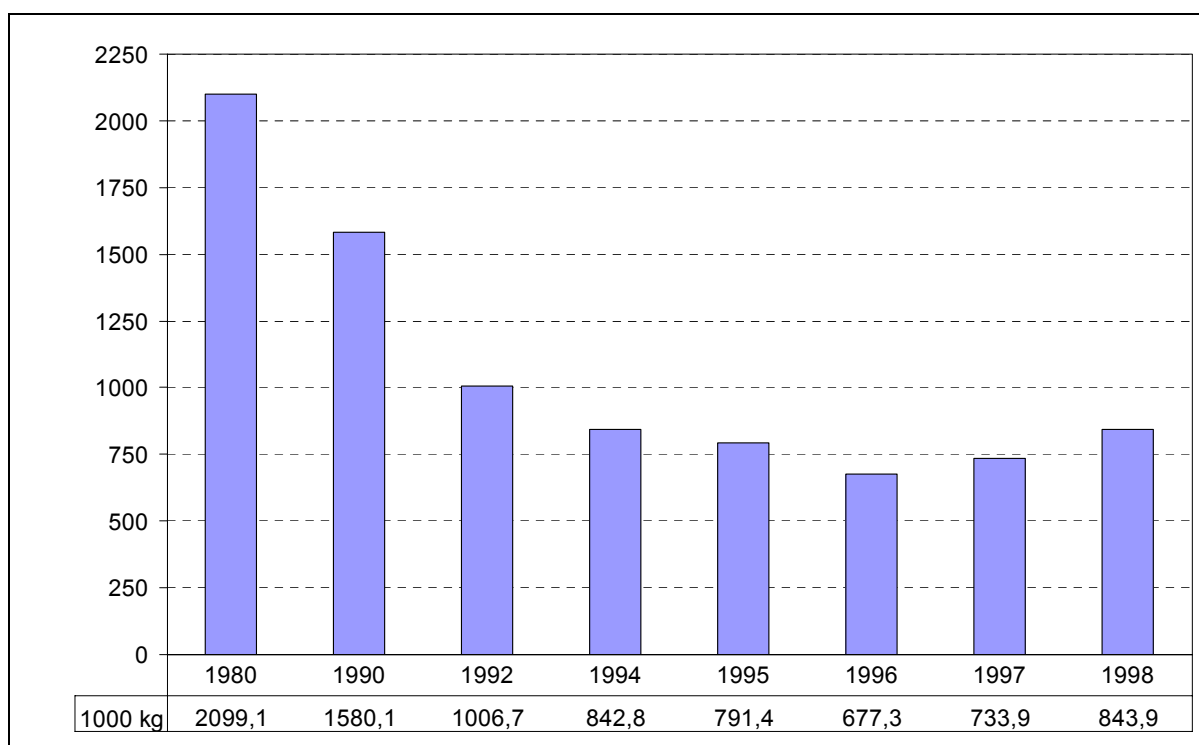
The national regulations had some components protecting biodiversity.

- Detailed analysis

According to the interviews of the regional authorities responsible for set-aside control, there have not been any unfavourable impact on biodiversity. Most (83%) of the farmers participate in agri-environmental programmes, and 12% of them in programmes related to biodiversity protection.

All (100%) of the farmers had faced difficulties with weeds. Despite high occurrence of weeds, only 30% of farmers had used herbicides on their farm land. This may be confirmed by the declining use of herbicides in the Finland. Compared to 1990, herbicide use was in 1995 50% less. The dramatic decline from 1980's and 1990's did not allow further decline after the introduction of CAP and the herbicides use has stabilised in 1995-98. (Figure 22)

Figure 22 **Sale of Herbicides 1980-1998 (active ingredients, whole country, 1000 kg)**



Source: Statistics Finland, annual agricultural statistics

Only 10% of the farmers promoted biodiversity by allowing natural revegetation on their set-aside while half (50%) specifically planted cover species.

In general the farmers were knowledgeable about environmental programs. Equal shares of 50% were well-aware or moderately aware about the instructions. There was no mention about being not aware of the programs. Most of the farmers had obtained information from the detailed MAF annual guides (80%), 77% from general media, 40% from farmers' union and 53% from other authorities. Other sources (e.g. neighbours) were mentioned by 13%.

Use of herbicides was not allowed in the set-aside and the mowing had to be done in a manner which does not unnecessarily harm the fauna. These regulations may have had a protecting impact on the biodiversity in agricultural areas.

5. ELEMENTS OF RESPONSES FOR QUESTIONS 4.5.1 AND 4.5.2, RELATED TO THE COMPLEXITY OF REGULATIONS ON THEIR IMPLEMENTATION

4.5.1 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?

This issue is dealt in more detail at EU -level. At national level in Finland transfer of set-aside from one farmer to another is not allowed and therefore it does not have any impact. Also in other aspects regulations have been prepared in a centralised manner. Very little or no "case-by-case" or regional adoptions occur. The local authorities are only in charge of implementing the national regulations.

Despite the apparent lack of flexibility the farmers interviewed did not see rigidity as a major issue. Most of the concerns were related to level of subsidies (too low) or administrative problems. The main administrative problems in all set-aside are listed in Table 16.

Table 16 Administrative Problems

Mistakes in area calculated	Minimum size of fields not respected (area or size) or presenting problems	Minimum yield for non food set-aside non respected or difficult to respect	Begin and end dates for set-aside problematic in relation to cultivation patterns	Information on the size of set-aside required arriving too late	Complicated admin. procedures	Lack of integration of different aids to the CAP system, particularly agri-environment measures	Disbursem. of grant too late	Other
– % respondents –								
10.0	23.3	0.0	23.3	23.3	53.3	6.7	13.3	16.7

multiple answers allowed, total >100%

4.5.2 What effects did national or regional application legislation have on the effectiveness of the set-aside instrument?

The CAP regulations were, despite many details, often considered by regional authorities straightforward and therefore easy to implement. The lack of variation in regulations do not allow for analysis on the impact of national measures. It is evident, that the application which enables classification of poor and far-away fields as set-aside has reduced the effectiveness of the set-aside instrument. Many of the fields would have been left unutilised in any case.

In Finland fallow or "letting the soil rest" has been utilised even before set-aside. Out of the farmers interviewed, 57% had been practising fallow even before the measure. It was used mainly for soil improvement.

After the set-aside, most farmers reduced their inputs to compensate the financial loss. This may be explained by the dramatic structural change in agricultural subsidies that took place with EU accession in 1995. Prior to that, the national scheme was based on production subsidies whereas CAP subsidies are area based. This change initiated a switch to low intensity production. The specific partial impact of set-aside cannot be identified from the total change.

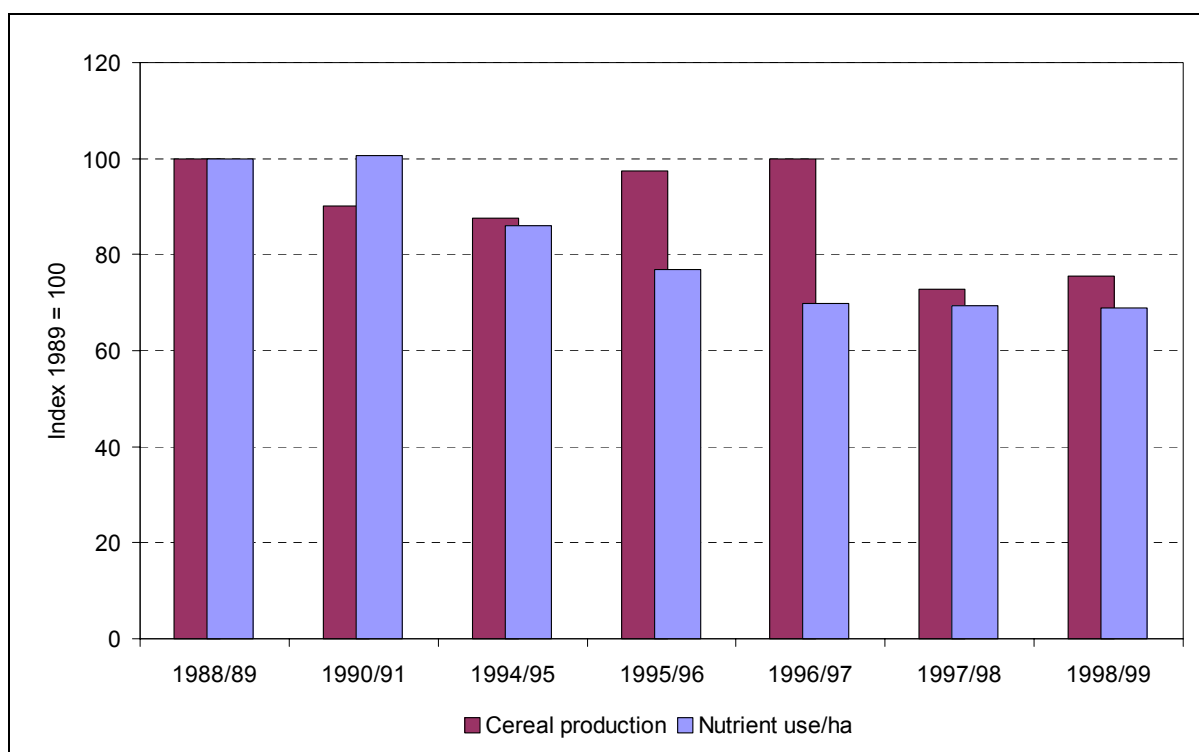
Table 17 Changes After Set-aside

Buying arable land or farms to meet your initial croppable area	Increasing yields on the remaining part of your holding	Reducing inputs and/or other cultivation methods to reduce costs	Rebalancing or changing cropping patterns in favour of the most profitable	Other
– % respondents –				
20	7	57	20	13

multiple answers allowed, total >100%

The change in production strategy can be seen in Figure 23. Nutrient use had a more declining trend than cereal production. This indicates that production concentrated on more productive fields and that the producers were more cautious with their input use compared to pre accession era.

Figure 23 **Nutrient Use and Cereal Production (1989-99)**



Source: Statistics Finland, annual agricultural statistics