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*Annexe 23 du rapport d'évaluation*

# **Evaluation of the Impacts of the Community Measures on Land Set aside**

## **Case Study Thuringen**

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**Content:**

<b>1</b>	<b>Regional Context .....</b>	<b>4</b>
1.1	General Information about Thuringen .....	4
1.2	Natural Conditions for Agriculture .....	4
1.3	Climatic Conditions .....	5
<b>2</b>	<b>Structure and Potential of the Agricultural Sector in Thuringen .....</b>	<b>6</b>
2.1	Farm Structure .....	6
2.2	Man Power in Agriculture .....	8
2.3	Land Utilization .....	8
2.4	Yields and Outputs in Crop Production .....	9
<b>3</b>	<b>Realization of Land Set aside in Thuringen .....</b>	<b>10</b>
3.1	Guidelines and Regulations .....	10
3.2	Compensatory Payments in Thuringen .....	11
3.3	Type and Amount of land Set aside in Thuringen .....	11
<b>4</b>	<b>Central Evaluation Questions .....</b>	<b>12</b>
	<u>Questions Concerning Effectiveness .....</u>	<u>12</u>
Q. 4.1.1	Did compulsory set aside and voluntary set aside measures contribute significantly to the arable crop supply control? What is their contribution to the reduction of cereal surpluses? .....	12
Q. 4.1.2	In what proportion did the remuneration of voluntary set aside strengthen the effectiveness of the set aside instrument? Estimate the share of the voluntary set aside areas which would have remained uncultivated in the event of absence of the measure. ....	15
Q. 4.1.3	To what extent has the set aside instrument determined the non-food production trend? .....	17
	<u>Questions Concerning Efficiency .....</u>	<u>18</u>
Q. 4.2.2	Is the impact of compulsory set aside-rate and the payment level on the large producers income likely to amend their crop choice so as to answer better the requests of the market? .....	18
	<u>Questions concerning Agronomical Practices .....</u>	<u>21</u>
Q. 4.3.1	Did the existence of a remunerated set aside encourage good crop rotation and which were the alternative crops in the plots set aside? .....	21
Q. 4.3.2	Did the location of the plots set aside encourage better cultivation methods? .....	22
Q. 4.3.3	Did the existence of the remunerated compulsory set aside cause production intensification in the other plots? .....	23
Q. 4.3.4	To what extent did the existence of the compulsory set aside modify the farm competitiveness by an adaptation of the productive structures? .....	25
	<u>Questions Concerning Environmental Impacts .....</u>	<u>28</u>
Q. 4.4.1	Did the adoption of set aside have a significant impact on the improvement of soil management? .....	28
Q. 4.4.2	Did the adoption of set aside have a significant impact on the improvement of water management? .....	28
Q. 4.4.3	Did the adoption of the set aside have a significant impact on the improvement of landscape management? .....	29
Q. 4.4.4	Did the adoption of set aside have a significant impact on the bio-diversity maintenance? .....	30
	<u>Question Relating to the Complexity of Regulation and of its Setting in Place .....</u>	<u>31</u>
Q. 4.5.1	What effects did numerous regulatory adaptations and the existence of numerous individual cases have on the effectiveness of the set aside instrument? .....	31
Q. 4.5.2	What effects did national or regional application legislations have on the effectiveness of the set aside instrument? .....	31
	<b>Particular Issues in Thuringen .....</b>	<b>32</b>

<b>Annex .....</b>	<b>Erreur ! Signet non défini.</b>
Annex 1: Federal Structure of Germany (Laenders) .....	<b>Erreur ! Signet non défini.</b>
Annex 2: General Information about Thuringen .....	<b>Erreur ! Signet non défini.</b>
Annex 3: Selection Criteria for Farm Interviews .....	<b>Erreur ! Signet non défini.</b>
Annex 4/1: Cultivation Area of Selected Crops in Thuringen (1000 ha) .....	<b>Erreur ! Signet non défini.</b>
Annex 4/2: Production of Selected Crops in Thuringen (1000 t) .....	<b>Erreur ! Signet non défini.</b>
Annex 5: List of Persons Contacted in Thuringen.....	<b>Erreur ! Signet non défini.</b>
Annex 6: Literature / Sources .....	<b>Erreur ! Signet non défini.</b>
Annex 7: Survey Results (Matrix) .....	43

## 1 Regional Context

### 1.1 General Information about Thuringen

Thuringen is one of the five New German Laenders and situated in the centre of Germany. Its size of 16.000 km<sup>2</sup> comprises 5 % of the German surface and 3 % of the entire population. High migration losses are a result of the unfavourable economic situation after the German reunification (unemployment, low wage-level etc.)

**Table 1:** Surface and Population in Thuringen and Germany <sup>1</sup>

Indicator	Thuringen		Germany	
	absolute	%	absolute	%
Surface (1000 km <sup>2</sup> )	16.1	4.5	357	100
Population 1999 (Mill. Inh.)	2.5	3	82.2	100
Population density 1999 (Inh./km <sup>2</sup> )	153	67	230	100
Change of population 1992-1998 (1000 Inh.)	-109.3	-6	1762.5	100

The population in Thuringen amounted to 2.9 mill people in 1950. This figure declined continuously down to 2.6 mill in 1990. After the opening of the western boarder population again decreased heavily to 2.4 mill which resulted in a population density of 153 inhabitants per km<sup>2</sup>.

In 1998 approx. 59 % of the population was living in rural areas. Population density here merely achieved 118 inhabitants per km<sup>2</sup>.

The share of employed people in agriculture, which was above 10 % in the former DDR, meanwhile sank to 3 % in 1998. The reduction of employees in agriculture also raised the unemployment rate in Thuringen. Over the last decade this figure amounted to 16-20% on average (see Annex 2: figure 2).

### 1.2 Natural Conditions for Agriculture <sup>2</sup>

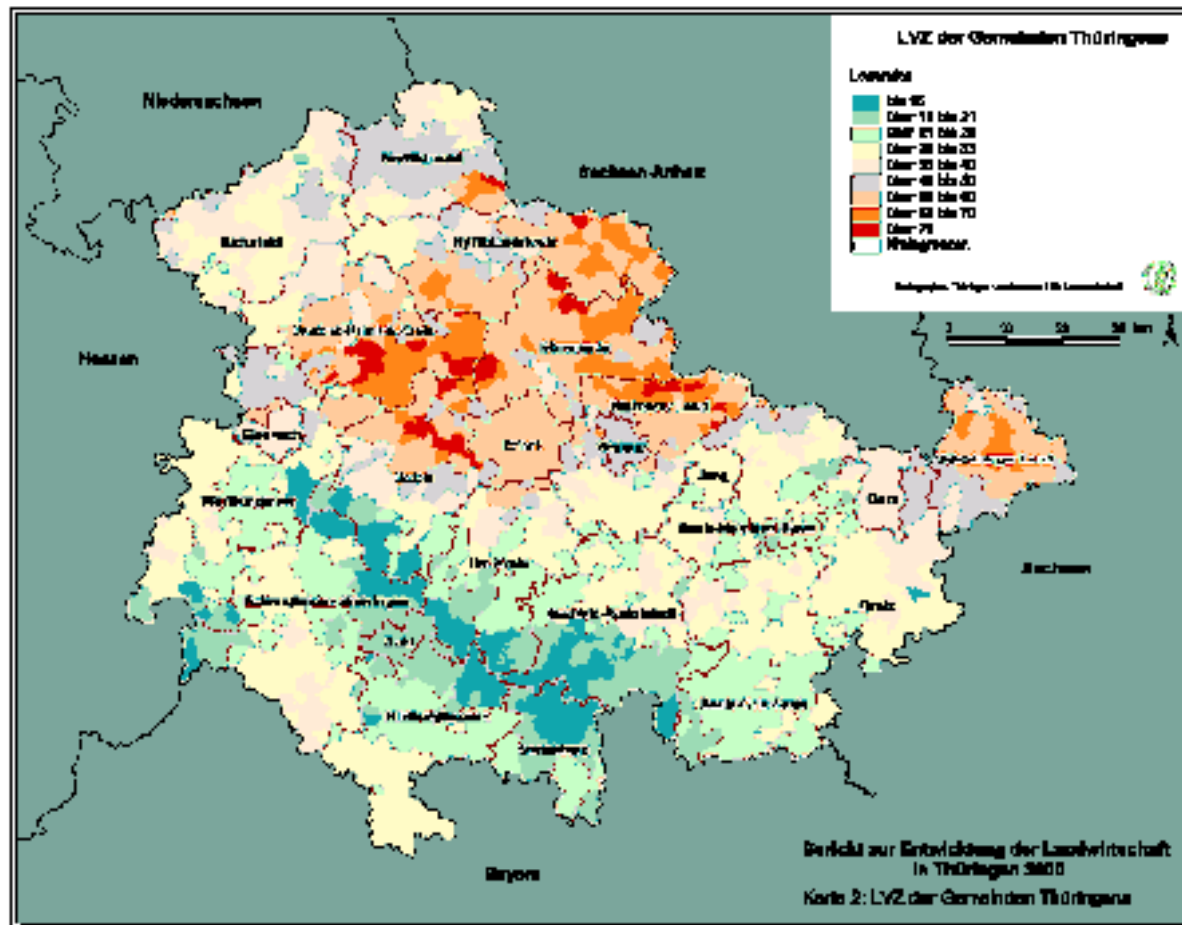
Thuringen shows very different conditions for agriculture. That concerns for example temperature, rainfall, topography and geological origin. Weathering soils (57 %) and loess soils (24 %) are predominant. The share of permanent grassland comes up to 22 % but differs regionally.

Figure 1 shows the different natural conditions within Thuringen, using the agricultural equivalent (LVZ). This figure indicates the relative value of production conditions and lies between 0 (extremely unfavourable) and 100 (extremely favourable). With 47 points Thuringen goes along with the German average. The regions in which the 30 interviews were carried out achieve average value numbers between 16 and 75.

<sup>1</sup> See Statistisches Bundesamt: Statistisches Jahrbuch für die Bundesrepublik Deutschland, different volumes.

<sup>2</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 1999.

**Figure 1:** Agricultural Equivalent (LVZ) of the Villages in Thuringen<sup>3</sup>



### 1.3 Climatic Conditions

The average rainfall in Thuringen is about 645 mm/year. That varies between 895 mm/year (district of Sonneberg) and 505 mm/year (district of Soemmerda). About one third of the surface (UAA) consists of dry areas with only 500 mm rainfall per year, however with fertile soils ("Thüringer Becken").

The average temperature is 7.3°C/year and varies from 6.2°C (Sonneberg) to 8.2°C (Soemmerda).

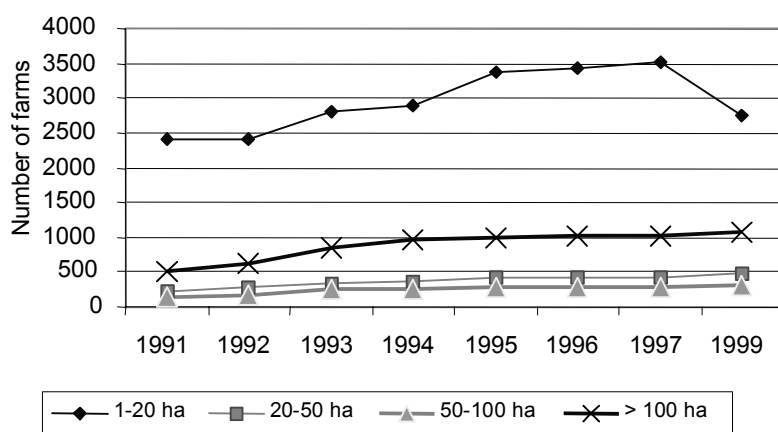
<sup>3</sup> See Thüringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thüringen, Erfurt 1999.

## 2 Structure and Potential of the Agricultural Sector in Thuringen

### 2.1 Farm Structure

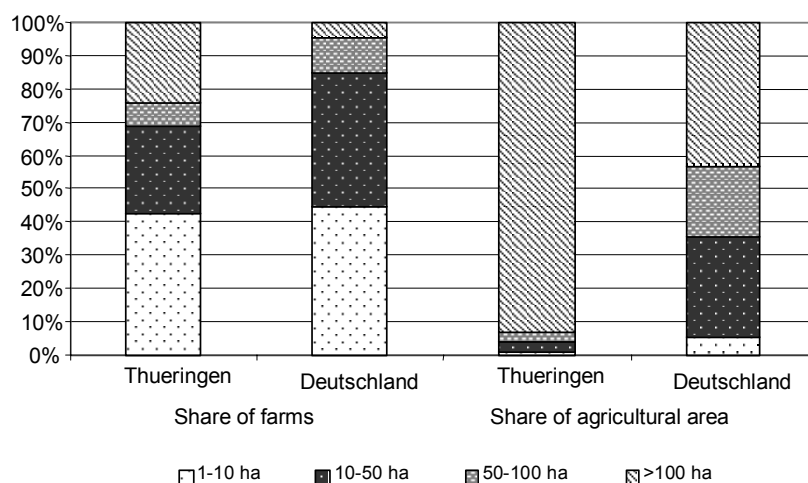
The average farm size was 157 ha UAA in 1998<sup>4</sup>, which is essentially higher than the average in western Germany (24 ha), but on the other side lower than the average in eastern Germany (175 ha). Until the year 1997 the number of enterprises increased in all size classes, particularly resulting in the dissolution of the former large co-operative and state farms. The number of small farms recently decreased slightly. This general trend has primarily economical reasons.<sup>5</sup>

**Figure 2:** Number of Farms by Size Classes in Thuringen 1991-1999<sup>6</sup>



In 1999 approx. 270 enterprises with more than 1000 ha were operated. The larger farms mainly have the character of legal persons (see figure 4) and cultivated predominantly rented land. The share of the area that was managed by private family farms was lower than in all other German Laender.

**Figure 3:** Farms and Utilized Agricultural Area by Size Classes in Thuringen 1999<sup>7</sup>



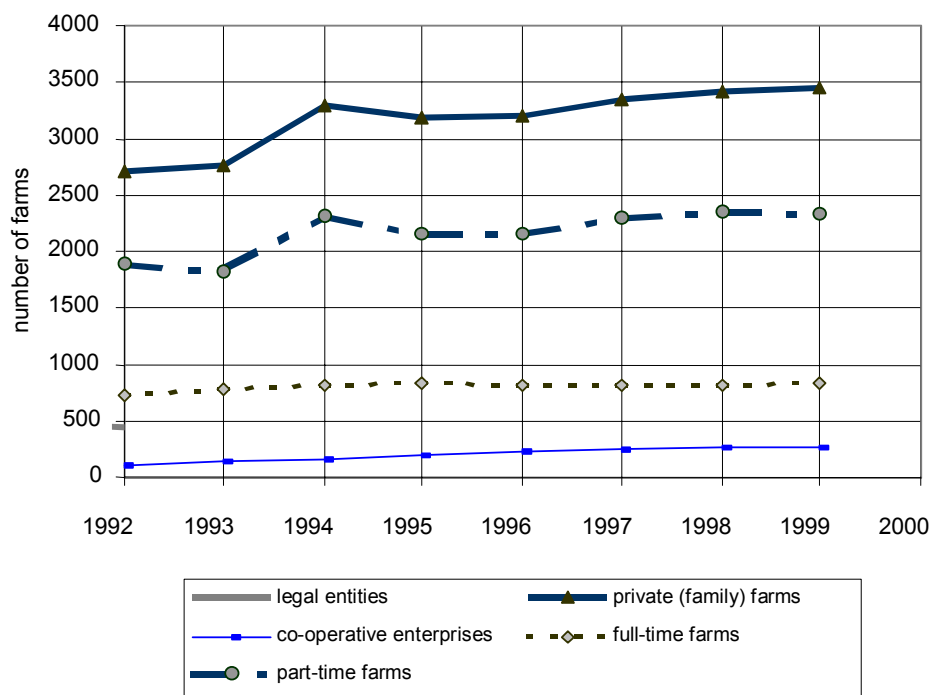
<sup>4</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 1999, p. 11.

<sup>5</sup> Another explanation is the fact that since 1997 small scale farms with less than 2 ha UAA are no longer counted as a farm.

<sup>6</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 2000.

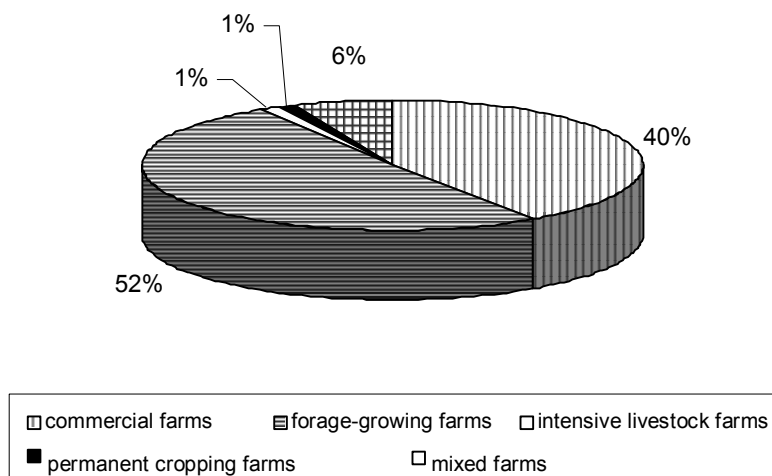
<sup>7</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 2000.

**Figure 4:** Legal Status of Farms in Thuringen <sup>8</sup>



Due to the natural conditions, forage-growing farms are dominating in Thuringen. Only about 40 % of all farms count among the commercial farms (see figure 5).

**Figure 5:** Farms by Farming Systems 1999 (in %) <sup>7</sup>

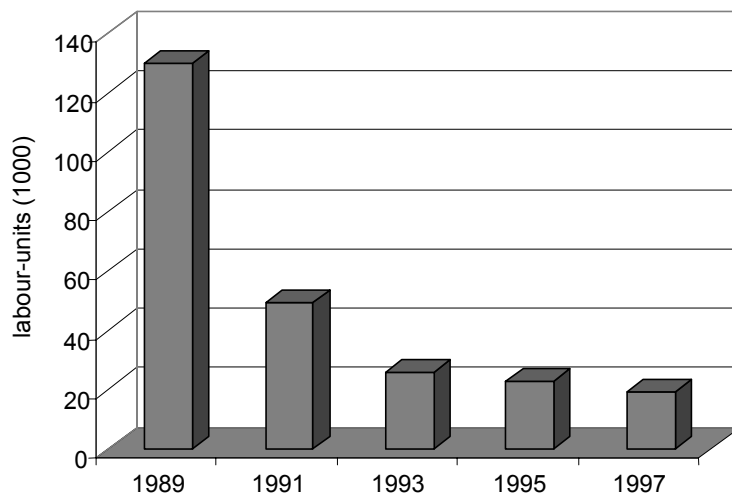


<sup>8</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 2000.

## 2.2 Man Power in Agriculture

As Figure 6 indicates the number of employed persons decreased by 85 % from 1989 (former DDR) to 1997. A main reason must be seen in the re-structuring process of the former large farms. 35% of the agricultural labour force went into unemployment immediately; further 30 % were dismissed in connection with prepension schemes.

**Figure 6:** Development of Employees in Agriculture in Thuringen 1989 – 1997<sup>9</sup>



The average age of employees occupied with farm work in 1999 was 42.5 years (women) and 43.5 years (men) respectively<sup>10</sup>. It decreased because particularly older employees (50 – 55 years) were dismissed on account of the structural change. As far as older employees still work in the enterprises they are mainly employed on a part time basis (less than 20 % of all employees over 60 years of age were employed full time).

## 2.3 Land Utilization

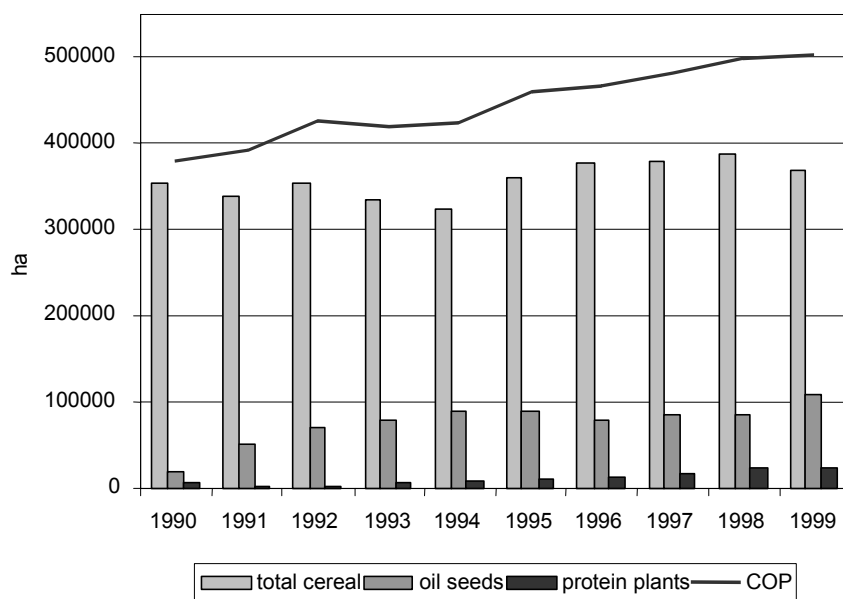
The share of arable land amounts to 77,5% of the UAA. At increasing scale COP-crops were cultivated on the arable land since 1990 (see figure 7). In 1999 the area cultivated with grain achieved 59% of the entire arable area, the area cultivated with oilseeds 17.6 % and the area cultivated with protein plants 3.8 %.

<sup>9</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 2000.

<sup>10</sup> See Thuringer Landesamt für Statistik, Erfurt 2001.



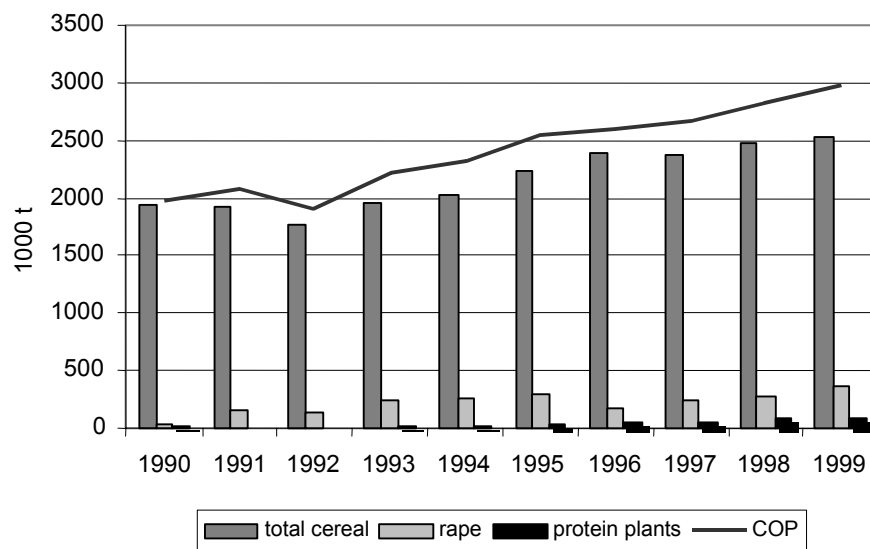
**Figure 7:** Cultivated Area of Selected Crops in Thuringen 1990 – 1999 <sup>11</sup>



## 2.4 Yields and Outputs in Crop Production <sup>12</sup>

The production of COP-crops <sup>13</sup> increased clearly and correspondingly to the development of the cultivated area. The growth of output was furthermore amplified by technical progresses.

**Figure 8:** Production of COP-Crops in Thuringen 1990 - 1999 <sup>14</sup>



<sup>11</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 2000.

<sup>12</sup> Information given about the level of yields and outputs also include the production of non-food products.

<sup>13</sup> COP-Crops: total cereal + oil seeds + protein plants, without maize silage and set aside.

<sup>14</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 2000.

The outputs of grain, oil seeds and protein plants rose continuously since 1992 due to yield gains and the enlarged cultivated area.

### 3 Realization of Land Set aside in Thuringen

#### 3.1 Guidelines and Regulations

The main regulations of the set aside programme were nation wide applied homogeneously. On regional level differences result primarily in the amount of the set aside premia. A regionalization of the premium did not occur in Thuringen.

Cultivation period: January 15<sup>th</sup> to August 31<sup>st</sup> (all years)  
 Set aside-rates: At least 5 to 15 % (EU-regulations); maximum 33% of COP area  
 Minimum size of plots: 0,3 ha; with Ø 20 meters (all years).

The regulation for land planting, intercultivation and the possibilities of its economical use was homogeneously formulated in Germany (see national report, paragraph 3.2).

**Table 2:** Realizations of the Land Set aside-Programme in Thuringen <sup>15</sup>

		1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
Set aside-rate (obligatory)	%	15%	15%	12%	10%	5%	5%	10%
Real set aside area in total	ha	80344	90737	86110	75507	48052	49234	75080
Number of applications for premia (COP)	No	1217	1268	1510	1525	1413	1458	1508
Premium-carrying COP-area in total	ha	553178	554731	552888	569262	570409	571581	575414
- thereof premium-carrying COP-area – professional scheme	ha	545637	546650	543891	560917	562085	563411	567460
- thereof Premium-carrying COP-area – simplified scheme	ha	7541	8081	8997	8345	8324	8170	7954
Set aside-rate (real) (set aside/ total COP-area)	%	14.5%	16.4%	15.6%	13.3%	8.4%	8.6%	13.0%
Set aside-rate (professional scheme) (set aside/ profess. scheme COP-area)	%	14.7%	16.6%	15.8%	13.4%	8.5%	8.7%	13.2%
Set aside land in total	ha	80344	90737	86110				
- thereof rotational set aside area	ha	80344	56864	39909				
Set aside area in total (other than extraordinary)	ha	80344	90737	86110	75507	6.13	48052	6.13
- thereof obligatory set aside area	ha	80344	90737	86110	53055	6.13	26547	6.13
- thereof voluntary set aside area	ha				22452	6.13	21505	6.13
-- thereof set aside area without premia	ha				20	6.13	64	6.13
- thereof non-food production	ha	3023	16408	45896	37111	6.13	17378	6.13
Five-year set aside area (R.2328/91)	ha	1494	1259	774	743	6.13		
Extraordinary set aside	ha							

<sup>15</sup> See Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft: Tabelle der statistischen Angaben, different volumes (not published); own calculations; See EU DG Agriculture and Agreste/ONIC/ONIOL (information given by Oréade-Brèche).

### 3.2 Compensatory Payments in Thuringen

**Table 3:** Compensatory Payments for COP-Crops <sup>16</sup>

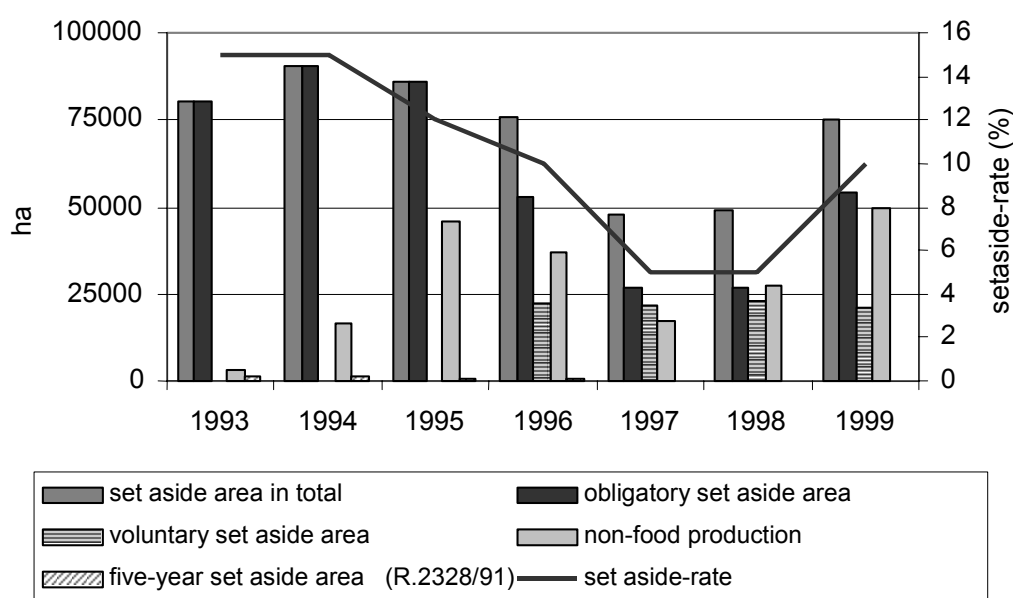
	Cereals		Set aside	Protein plants	Oilseeds	
Year	Average yield (dt/ha)	Compensation premia (€/ha)	Compens. Premia (€/ha)	Compens. Premia (€/ha)	Average yield (dt/ha)	Compensation premia (€/ha)
1993	61.3	185	332	480	28.7	526
1994	61.3	258	421	480	28.7	526
1995	61.3	332	421	480	28.7	526
1996	61.3	332	421	480	28.7	526
1997	61.3	332	421	480	28.7	526
1998	61.3	332	421	480	28.7	526
1999	61.3	333	422	481	28.7	527

### 3.3 Type and Amount of Land Set aside in Thuringen

Because of the German reunification the 5 year lasting voluntary set aside, which had been offered since 1988, did not play a significant role.

After the implementation of obligatory set aside in 1992, approx. 50.000 to 90.000 ha UAA were set aside annually in Thuringen. Thereof 20.000 ha were taken from production voluntarily each year (see figure 9). In 1999 about 13 % of the COP-area were set aside under the professional scheme. That indicates that 3.2 % of the area were taken from production voluntarily.

**Figure 9:** Development of Set aside in Thuringen (see table 2)



<sup>16</sup> See Bundesministerium für Ernährung, Landwirtschaft und Forsten: Die europäische Agrarreform – Pflanzlicher Bereich-Flankierende Maßnahmen, different volumes.

## 4 Central Evaluation Questions

### Elements of Answers for Questions 411 to 413

#### Questions Concerning Effectiveness

**Q. 4.1.1** Did compulsory set aside and voluntary set aside measures contribute significantly to the arable crop supply control? What is their contribution to the reduction of cereal surpluses?

**Synthetic Answer:**

*On account of land set aside no decrease but an even stronger increase by 43% in grain production was achieved. The effects of the fundamental political and structural changes after the German reunification process on farm structure and farm development overlapped the impacts of single agricultural programmes as for instance the set aside measure.*

*The production-structure was changed in favour of the „grande cultures“. Due to the reduced areas for forage (-55%) and sugar beets growing (-27%) the cultivation of rape became more competitive in crop rotation (72%). Therefore, the modification of the set aside-rate did not influence the total production of rape-oil significantly, as the share of oilseeds in crop rotation stayed relatively constant; just the proportion between food- and non-food rape shifted.*

*Without land set aside a higher grain output (at about 235.000 t/year) would have been expected (about 10 % of the average total grain production). Approx. 37 % of the not produced grain was prevented by voluntary set aside (about 87.000 t/year).*

*The voluntary set aside comprised relatively constant 21.000 to 22.000 ha every year (1996/97 – 1998/99).*

#### **Details of the Answer:**

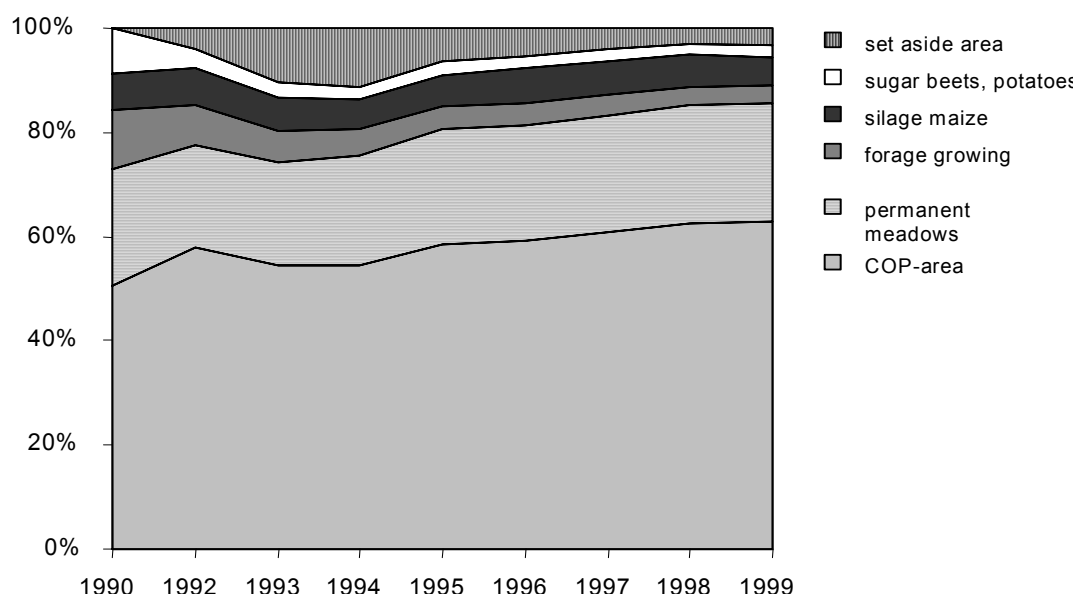
As figure 10 shows, the area cultivated with COP-crops only decreased at the very beginning of the set aside programme; since 1994 the COP-area is increasing continuously.

The development of COP-production may particularly be explained with the structural change in the agricultural sector after the German reunification (regulation of property issues, re-structuring of large state farms etc.), and not so much with the obligation to participate in set aside. Overall, the COP-area raised with 20 % between 1992 and 1999.

Correspondingly

- the forage growing areas were reduced by 55 %, following the cut in animal husbandry;
- the cultivation of root crops decreased (sugar beets – 27 %) because yields per ha increased while the sugar beet quota remained fix; the cultivation of potatoes sank due to the strong reduction of demand.

**Figure 10:** Utilization of Agricultural Area in Thuringen 1990 - 1999<sup>17</sup>



The area set aside achieved its maximum in 1994 (see figure 9). Afterwards it decreased with the lowering of the set aside-rate. In all years, however, more land than required was set aside. The part of the voluntary set aside varies between 0,3 % (1993) and 4% (1998). Since 1996 the extent of voluntary set aside areas amounted constantly to about 21.000 – 22.000 ha (see table 2). This rather fixed proportion can primarily be explained with the extended cultivation of non-food crops and the limitation of food-rape production.

**Table 4:** Changes in Cultivation of Selected Crops in Thuringen 1992-1999 <sup>18</sup>

	Change 1992 – 1999		
	Total in ha	%	% per year
Wheat	11125	6	1
Rye	7301	78	11
Winter barley	-3373	-5	-1
Spring barley	-19007	-21	-3
Oat	788	13	2
Grain maize (CCM)	3235	206	29
Grain total	13118	4	1
Potatoes	-5369	-57	-8
Sugar-beets	-4681	-27	-4
Rape	39550	72	10
Leguminous crops	20550	688	98
Forage growing	-31420	-55	-8
COP-area in total	77300	20	3

In 1995 a so called “cut-off-limit” (Abschneidegrenze) for non-food rape was introduced for output-control. That limited the cultivation of food rape to a maximum of about 10 % of the arable area<sup>19</sup>. As the farms with favourable production conditions had a relatively high share of grain within their crop rotation, problems occurred on account of the cut-off-limit. So, predominantly non-food rape was cul-

<sup>17</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, Erfurt 2000.

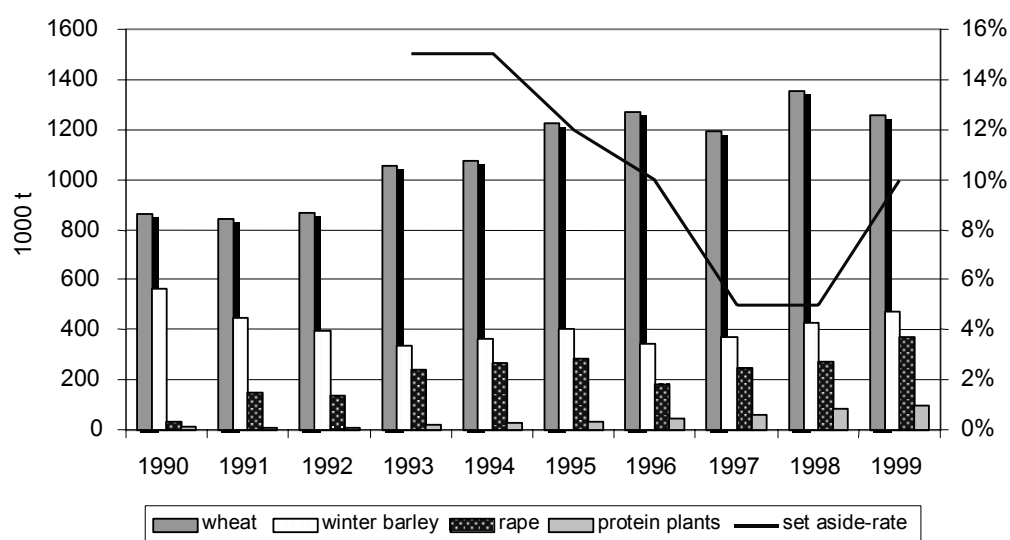
<sup>18</sup> See Statistisches Jahrbuch für die Bundesrepublik Deutschland, different volumes.

<sup>19</sup> Upper limit: 1995,1996: 8,4%; 1997:13,5%; 1998: 10%; 1999: 9,5%; information of the Ministry for Agriculture.

tivated in order to be able to integrate a leaf-crop into the crop rotation. In this case climatic facts played also a role: Especially within the areas with a strong dryness during summer rape is suitable for cultivation as it is able to make more use of the winter soil moisture.

In total, the cultivation of rape increased by 72 % up to 94.200 ha since 1992. The cultivation of protein plants rose, too. Both crops partly replaced the forage growing, sugar beet and potatoe production within crop rotation. Overall the CAP-reform with the land set aside scheme led to an extended cultivation of premia-crops and to a better adaptation to the market situation. Within grain cultivation this can be seen e.g. in a significant extension of the cultivation of grain maize, rye, triticale and wheat.

**Figure 11:** Production of Selected Crops in Thuringen 1990 – 1999 <sup>20</sup>



**Table 5:** Changes in Production Output of Selected Crops in Thuringen 1992-1999 <sup>19</sup>

	Changes		
	total (1000 t)	%	% per year
Wheat	384.9	44	6
Rye	66.3	141	20
Winter barley	81.9	21	3
Spring barley	3.2	1	0
Oat	16.4	67	10
Grain maize (CCM)	29.9	243	35
Grain total	760.9	43	6
Potatoes	-146.2	-48	-7
Sugar-beets	-41.1	-6	-1
Rape	231.9	168	24
Leguminous crops	88.5	1383	198
Forage growing	-293	-51	-7
COP-production in total	1081.3	57	8

Land set aside did not lead to a decrease in the production of COP-crops in Thuringen. From 1992 to 1999 grain production grew by 43 %, the production of oil seeds by 168 % and the production of protein crops even by 1400 % (from a low level). The political and structural changes within the entire

<sup>20</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, 2000.

economy following the reunification process obviously overlapped the effect of set aside and other single agricultural programmes.

The production increase can be explained by the following factors:

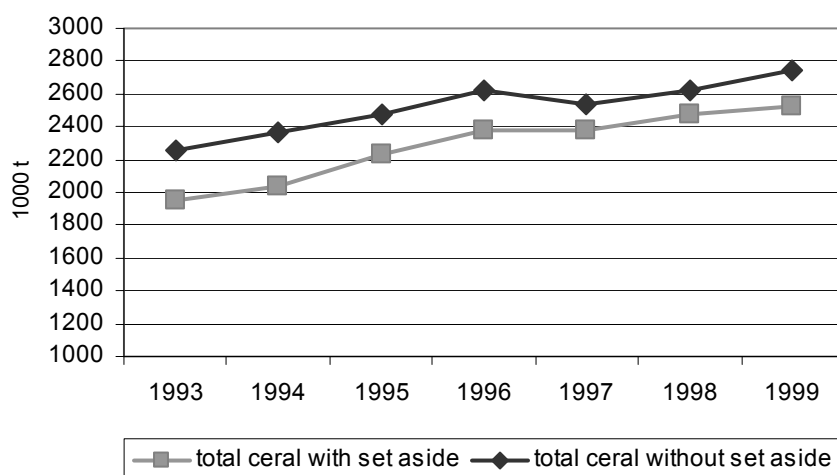
- Yield increases due to an improved farm management, corrected marketing conditions and higher intensities of farming (see Q. 4.3.3);
- Changes in land use: extension of COP-areas, reduction of forage growing and sugar beet as well as potatoe cultivation;
- Clarification/regulation of land property questions since the middle of the 90s; dissolution of the large co-operative and state farms, establishment of new private enterprises.

Due to the extensive cultivation of rape for non-food purposes it can be assumed that without the obligation for land set aside grain production would have been even higher. For the estimation of the output development the following facts must be taken into account:

- On appraisal of the farmers predominantly smaller and less productive areas were set aside (assumption: grain yields of 75 % of the regional average yield);
- Set side areas in total showed a rather identic productivity; farm managers did not distinguish between obligatory and voluntary set aside by planning the crop ratio of their farms;
- Only about 75 % of the entire set aside area could be cultivated with grain or other commercial food crops, as the cultivation of rape for non-food purposes (due to the cut-off-limit) would comprise at least 15.000 – 18.000 ha even without land set aside;
- Because of crop rotation restrictions (high share of grain already) maximally 85 % of the additional arable area (in the absence of set aside) could be cultivated with grain.

With these assumptions the grain output which was not produced because of land set aside, can be estimated to 235.000 t/year (between 145.000 t with a set aside-rate of 5 % and about 334.000 t with a rate of 15 %), see figure 12:

**Figure 12:** Development Trend of Grain Production With and Without Land Set aside<sup>21</sup>



<sup>21</sup> See Thueringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thueringen, 2000.

**Q. 4.1.2:** In what proportion did the remuneration of voluntary set aside strengthen the effectiveness of the set aside instrument? Estimate the share of the voluntary set aside areas which would have remained uncultivated in the event of absence of the measure.

**Synthetic Answer:**

*Initiated by the premia for voluntary set aside approx. 3 % of the entire COP-area were additionally set aside. That slowed the increase in grain production down and on the other hand raised the production of oilseeds.*

*On appraisal of the farmers only very few areas would have been set aside without premia. The voluntary set aside facilitated the internal planning for crop-rotation and generally increased the profitability of production because primarily less productive areas were set aside and cost savings could be realized with land set aside (particularly labour cost).*

**Details of the Answer:**

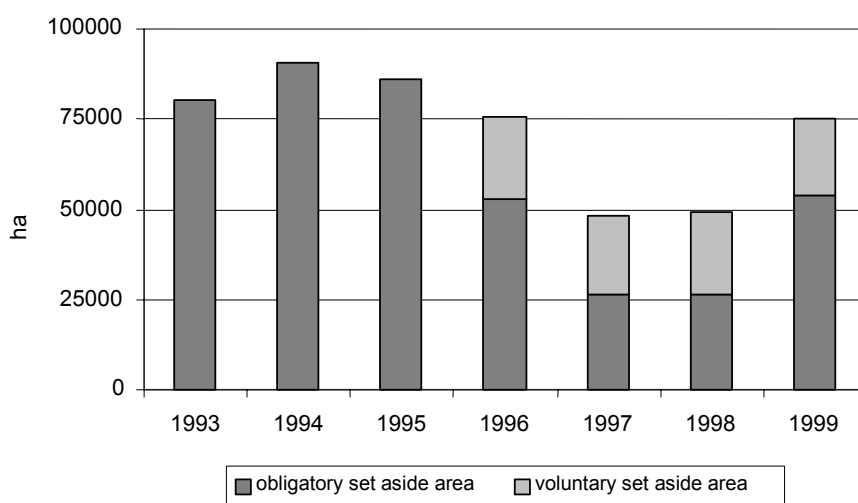
A voluntary set aside was assumed when more than 10.5 % of the entire COP-area were set aside in 1999. Out of the 30 interviewed farms, 77 % exceeded this margin. 37 % thereof even set more than 12 % of their total arable area aside. All in all, about 3 % (1999) of the entire COP-area in Thuringen were set aside voluntarily (see table 2).

The farmers interviewed stated the following reasons for voluntary set aside:

- Primarily agronomical aspects (size and location of plots) as well as economic arguments (yields of the plots);
- Necessity to integrate a leaf-crop into the crop ratio due to the high share of grain;
- Precaution measure against possibly imprecise measurements of the set aside areas;
- Possibility to reduce the number of employees with a higher amount of set aside (3 enterprises).

The voluntary set aside developed to a relatively stable element within the farmers decision making (see figure 13). 87% of the farmers who set aside land voluntarily in 1999 did that in previous years, too. One farmer even mentioned the upper limit of 33 % set aside area as an obstacle. According to farm management, a differentiation between voluntary and compulsory set aside was hardly possible, because farmers did not distinguish between both categories.

**Figure 13:** Development of Set aside Areas in Thuringen 1988 – 1999 <sup>22</sup>



<sup>22</sup> See ZMP Bilanz Getreide Ölsaaten Futtermittel, different volumes.



Without the payment of premia only very few areas would have been set aside voluntarily. In this respect the premia amplified the effects of obligatory set aside (limitation of grain production) and supported an agronomical and economic suitable adaptation of crop-rotation (rape, leguminosae). Particularly due to the cut-off-limit for food-rape more flexibility in the cultivation resulted through land set aside.

The farms benefiting from the simplified regulation (small producers) in Thuringen are irrelevant to the entire production as they cultivate less than 1.5 % of the entire arable area only.

**Q. 4.1.3: To what extent has the set aside instrument determined the non-food production trend?**

**Synthetic Answer:**

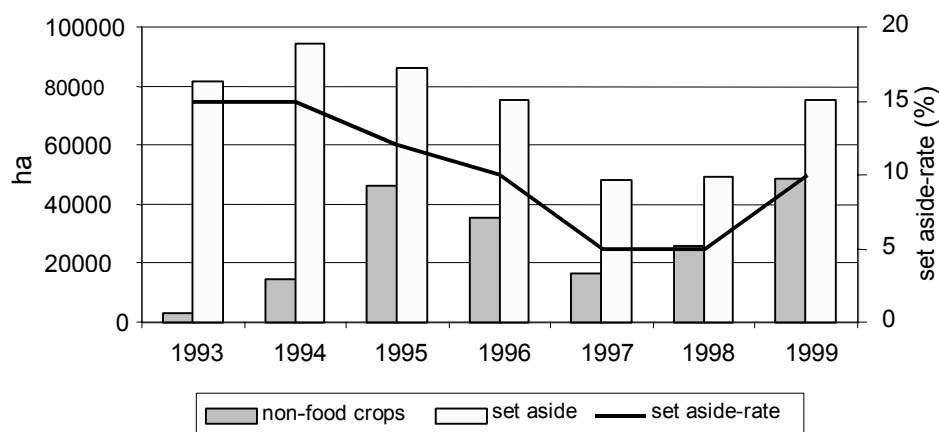
*Set aside strongly stimulated the production of non-food-crops in Thuringen, particularly within favoured areas. The amount of cultivation and therewith the output correspond with the set aside-rate. On the other hand, set aside is not the only argument for the increased production.*

*The production was also influenced by the introduction of a regional production restriction for food-rape. That limited the cultivation of rape to a maximum of about 10 % of the total arable area since 1995. As far as more rape was cultivated - especially due to crop-rotation reasons – it could only be non-food rape. Therefore, it may be assumed that even without land set aside non-food-crops would have been cultivated due to the restriction on food-production. That is particularly true for the time since 1995, when the processing facilities for biodiesel were enlarged. 21.000 to 22.000 ha of the area cultivated with rape can be assigned to the effects of land set aside.*

**Details of the Answer:**

The market for rape oil is estimated as very dynamic. The Ministry for Agriculture takes the view that set aside guarantees the development of this market. In 1999 about 66 % of the set aside area in Thuringen were cultivated with non-food-crops, predominantly with rape (97 % of the non-food area). A particularly large rape cultivation can be found in favourable natural conditions (e.g. district Altenburger Land with 86 %), a particularly small rape production on marginal and unfavoured areas (e.g.: district Sonneberg with 16 %). Although Thuringen only comprises 4.7% of the entire German UAA, 13.4 % of the total non-food-production has its origin in Thuringen. Beside rape (for biodiesel) the cultivation of medicinal plants, smell and spice herbs played a role. These crops were already characteristic for Thuringen before WW2.

**Figure 14:** Development of Non-Food-Production and Land Set aside in Thuringen 1993 – 1999 <sup>20</sup>



**Table 6:** Land Set aside and Cultivation of Non-Food-Crops in Thuringen 1993 – 1999 <sup>23</sup>

Year	Set aside-rate	Set aside	Non-food crops	
	%	Ha	ha	%
1993	15	81918	3025	3.7
1994	15	94388	16797	17.8
1995	12	86346	48773	56.5
1996	10	75179	36579	48.7
1997	5	48201	17230	35.8
1998	5	49566	26954	54.4
1999	10	75395	49540	65.7

80% of the interviewed farmers (24 farms) cultivated non-food-crops with approx. 80.6 ha each. As main reasons for the cultivation were mentioned: profitability and positive effects resulting from crop rotation.

The 6 farms (20%) that refused the cultivation of non-food crops were predominantly confronted with unfavourable natural conditions for farming (Thüringer Wald). They judged rape cultivation as a low profit business or did not have suitable mechanization for the cultivation and harvesting of rape (5 enterprises). Only two farmers meanwhile changed their opinion in favour of non-food crops.

The possibility to cultivate non-food rape is a central argument of the regional Ministry for Agriculture and the Farmers Union for the continuation of set aside policy. The market potentials for oil-crops are estimated as good, especially since processing capacities were built.

As further advantages were mentioned:

- Loosening of crop rotation restrictions combined with positive effects on soil fertility,
- possibility for a decrease of labour peaks (improvement of farm organization).<sup>24</sup>

The marketing potentials for rape oil are estimated as rather favourable by the agricultural trade as well. The enlargement of the regional oil processing facilities should contribute to a stabilization of the rape price on a higher level in Thuringen.

### Elements of Answers to Questions 422 to 444

#### Questions Concerning Efficiency

**Q. 4.2.2:** Is the impact of compulsory set aside-rate and the payment level on the large producers' income likely to amend their crop choice so as to answer better the requests of the market?

**Synthetic Answer:**

*In the majority of the larger farms, profit remained rather constant since 1992 or increased. The effects of price cuts were balanced to a large extent by area based premia, raised yields and improvements of farm organization.*

*In total, the evolution of farm profits was determined less through the set aside scheme but by the general development of prices and costs and particular regulations for enterprises in the eastern part of Germany.*

<sup>23</sup> See Thüringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thüringen, 2000.

<sup>24</sup> See Thüringer Ministerium für Landwirtschaft, Naturschutz und Umwelt, Abt. 2 (personal information, June 2001).

*The production structure of the farms was adapted increasingly to the market and price situations and to premia for specific products. The land set aside was also decisive for changes of crop rotations and the extensive cultivation of rape on the plots set aside. The voluntary cultivation of rape can be explained above all with crop rotation effects and the favourable price development for non-food-rape in the last years.*

#### Details of the Answer:

Due to the reduction of animal husbandry, the increase of yields of sugar beets and the decline of potato production more arable areas were at disposal, which since 1991/92 were used for the production of (other) commercial crops. With the integration of the former DDR into the CAP the commercial crop farming was increasingly adapted to the European market conditions as far as agronomical and economic benefits could be realized. That reaction was based primarily on changes in price relations, premia and market demands and the improvement of farm management practices.

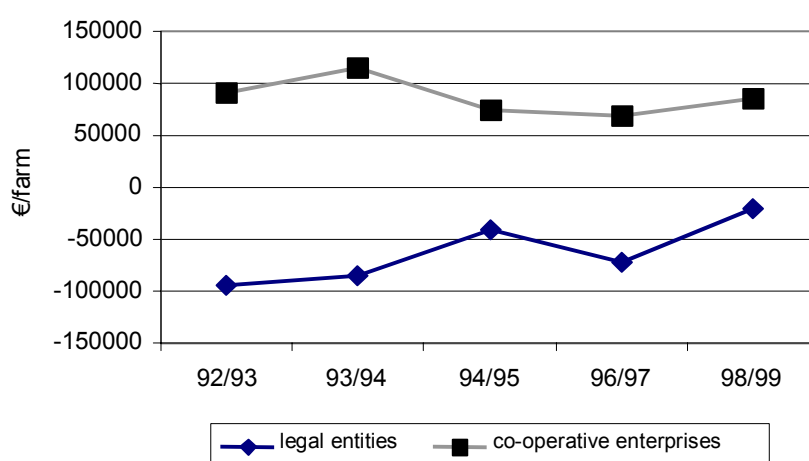
Farms that cultivate at least 1000 ha are counted among the „larger farms“. In the year 1999 in Thuringen in total 274 larger farms cultivated about 62 % of the entire UAA.

Out of the 30 units 15 (50 %) count among the larger farms. On appraisal of the interviewed operators, the income contribution of commercial farming since the introduction of land set aside stayed relatively constant in 8 of those farms. Only one farmer had the impression of increasing profits. However, the influence of set aside on the development of farm income was always estimated as small. Moreover, this influence was in part overlaid by changes in stock keeping.

The farmers appraisal of their profits correspond only partly to reality. As the analysis of farm accounts demonstrate,

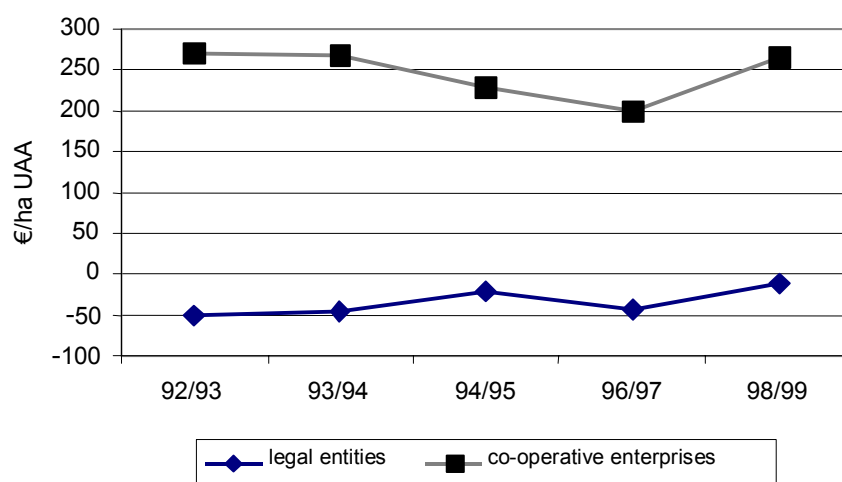
- profit remained relatively constant in the (larger) co-operative enterprises during the 90s,
- income losses of the legal entities, which were very high after the reunification, could be reduced clearly (see figure 15).

**Figure 15:** Development of Profits per Farm (€, current prices) of the Larger Farms in Thuringen 1992/93 – 1998/99 <sup>25</sup>



<sup>25</sup> See Thüringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Farm account analysis, different volumes; own calculations.

**Figure 16:** Development of Profits per ha UAA (€, current prices) of the Larger Farms in Thuringen 1992/93 – 1998/99 <sup>25</sup>



12 out of the 15 larger farms interviewed (77%) improved the quality of their products since 1992 on their own appraisal - most frequently in compliance with quality requirements (e.g. with wheat, brewing barley). Some large-scale farms participated in production programmes with certificate of origin, only few reduced the intensity of farm cultivation since 1992. Above all the large-scale enterprises specialized on the cultivation of high-quality-grain and reacted by this way to the market demands and the relatively stable price conditions on the European grain market. All in all, 60 % of the larger farms expanded their crop production (see table 8), partly through the extension of grain production (see table 7), partly through the enlargement of rape cultivation.

**Table 7:** Development of Grain Cultivation Area in the Larger Farms in Thuringen

	Reduction of grain cultivation area	No significant change of grain cultivation area	Expansion of grain cultivation area
Share of Farms (Total: 15 Farms)	13 %	60 %	27 %

**Table 8:** Development of COP-Production in the Larger Farms in Thuringen (Multiple Responses possible)

	Expansion of COP-production	No significant change of COP-production	Expanded activities outside COP-production
Share of Farms (Total: 15 Farms)	73 %	7 %	60 %

More than half of the larger farms modified the crop rotation since 1992 according to the following criteria:

- Firstly under agronomical aspects (particularly for the correction of crop rotation);
- Secondly because of the changed economic circumstances and the objective to improve the farm organization;
- Only to a small extent because of environmental issues.

In spite of compulsory set aside, the large-scale farms extended their COP-production since 1992 clearly. The land set aside was integrated into crop rotations in multiple ways:

- By taking the lesser productive plots out of production,
- by using most of the set aside areas for the cultivation of rape.

Generally, the adaptation of crop rotations contributed significantly to the economic improvement of the single farm organization. This also happened because of better orientation of production structures on the market demands. Considering the extent of adaptations it may be verified that the large-scale farms reacted very fast to the market demands. However, it must be noticed that the on-farm adaptations in the New German Laenders are based on super-ordinate influences in the first place, in particular the integration into the CAP and public aids for the improvement of farm structure and sectorial infrastructure.

### **Questions concerning Agronomical Practices**

**Q. 4.3.1: Did the existence of a remunerated set aside encourage good crop rotation and which were the alternative crops in the plots set aside?**

**Synthetic Answer:**

*The crop rotation was influenced positively by the set aside in 30% of the interviewed farms, in the majority of the cases their effect was neutral. Modifications of crop rotation occur in a decrease of root plants and forage growing and in a corresponding extension of oilseeds and protein plants. The reasons for it are: Drop of animal husbandry, small equipment with sugar beet quotas, changes in consumer demands, development of producer prices and the amount of premia for specific products.*

*Since about half of the set aside areas were cultivated with rape. Partially soil improving crops were also chosen as well as specific ecological compound seeds.*

### **Details of the Answer:**

57% of the interviewed farmers changed their crop rotation since 1992 clearly. The essential reason was the integration of the set aside areas into crop planning. 66% of the farmers chose a rotational set aside exclusively. Another 23 % decided for a combination between rotational and fixed set aside. Only 10 % of the farmers set aside identic plots each year.

The areas set aside were managed in the following manner:

- Non-food-products: 47 % of the farmers cultivated (increasingly) non-food rape;
- Fallow land with natural regrazing: 17% of the farmers practised a natural grass regeneration;
- Soil improvement: 40% of the farmers cultivated specific crops for the improvement of soil fertility (e.g. phacelia, clover);
- Land use for environmental purposes: 20% of the farmers decided for other crops (e.g. specific seeds for game or bees).

In total, the following changes of crop rotation resulted:

- Increase of the share of rape and protein plants,
- increase of the proportion of wheat,
- decrease of the share of forage growing and root plants.

The influence of set aside on crop rotation is to be classified neutral for the most cases, as root plants (root plants, potatoes) with positive crop rotation effects have been replaced through rape and other crops, which show comparable crop rotation effects. Nevertheless, in 30% of the interviewed farmers the crop rotation became improved from an agronomical point of view (see table 9):

**Table 9:** Modifications in Crop Rotations

	Degradation of crop rotation	Neutral effects on crop rotation	Improvement of crop rotation
Share of farms (total: 30 farms)	3.3%	66.6%	30%

At the beginning of the programme the plots set aside partly remained uncultivated, with natural re-grazing only. This (cost minimizing) practice was given up soon when weed infestation became a problem. For a better weed control, non-food rape was cultivated increasingly. In some cases, forage growing seeds were sowed for harvesting in the upcoming year.

The crop rotation was adapted to the set aside-rate: in the case of a low set aside-rate, the share of grain increased in crop rotation (at the expense of rape), in the case of higher set aside-rates the share of rape increased (at the expense of grain).

#### Q. 4.3.2: Did the location of the plots set aside encourage better cultivation methods?

##### Synthetic Answer:

*In general, the land set aside resulted in an improvement of cultivation methods. The longer-term set aside of "problematic" plots lead to cost savings (reduced input) and facilitated the optimization of production on the remaining areas. By this way, positive effects on soil fertility were achieved through the extensive rotational set aside.*

*According to the interviewers' estimation set aside was mostly of agronomical advantage for the farmers. From an economic point of view the effects were predominantly neutral. At the judgement of the interviewers, only 13% of the farms might have been affected by economic disadvantages of set aside.*

##### Details of the Answer:

According to the appraisal of the interviewers, the influences of set aside on the economic balance were mainly neutral to positive, onto the agronomical balance predominantly positive. Advantages resulted from an economic point of view from the possibility to take less productive areas out of production and to simplify by that way farm management. The premia for the set aside compensated the profit loss to a large extent. Only in the better sites in which also more productive plots had to be set aside, the programme was felt as an economic disadvantage. This was true particularly in the first years, when a significant price difference existed between food and non-food rape.

**Table 10:** Effects of Land Set aside on the Economic and Agronomical Balance of the Interviewed Farms

Farms (in total: 30)	Disadvantage	Neutral	Advantage
Economic balance	13,3 %	76,7 %	10 %
Agronomical balance	0 %	46,7 %	53,3 %

From an agronomical point of view, positive modifications of farming techniques can be stated. On one hand less productive areas could be set aside even for a longer term; on the other hand, cost savings resulted if smaller and peripherally located plots could be set aside.

**Table 11:** Selection of Areas for Set aside (30 farmers interviewed, multiple responses)

	Rota- tional set aside	Fixed set aside								
		Along water courses	On small plots with cultivation handicaps	On pe- ripheral or isolated areas	On less productive and mar- ginal areas	On slopes	On exten- sively cultivated fields or margins	Acquisi- tion of plots to be set aside	Transfer set aside obligation to another farm	Another reason (edge of the forest)
Answers (%)	86.7	6.7	20	16.7	37	20	10	0	0	3.3

Answers related to the entire period of the set aside programme (1992-99).

As 87% of the interviewed farmers decided for rotational set aside, nearly all areas were cultivated continuously. As a result, positive effects resulted in soil fertility, particularly by the cultivation of rape and soil improving plants. In this way, the possibilities to use minimum tillage techniques were facilitated.

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

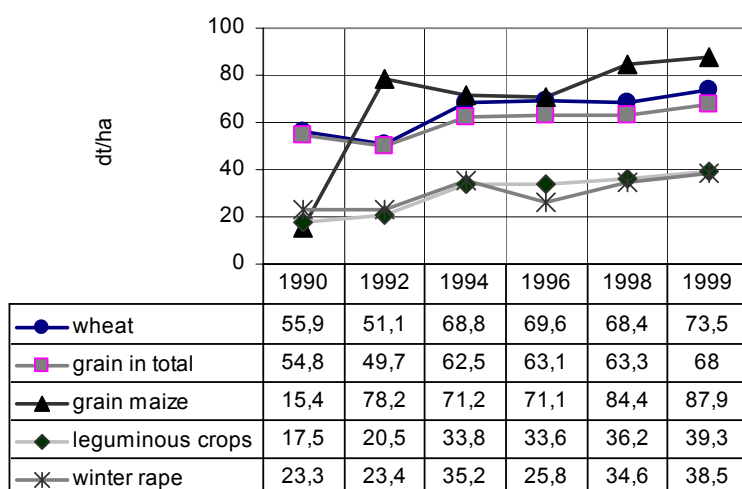
**Synthetic Answer:**

*The areas not set aside were cultivated more intensively since 1992. However, the intensification of farming was primarily the result of the adaptation of the farms to their changed economic and political context after the German reunification.*

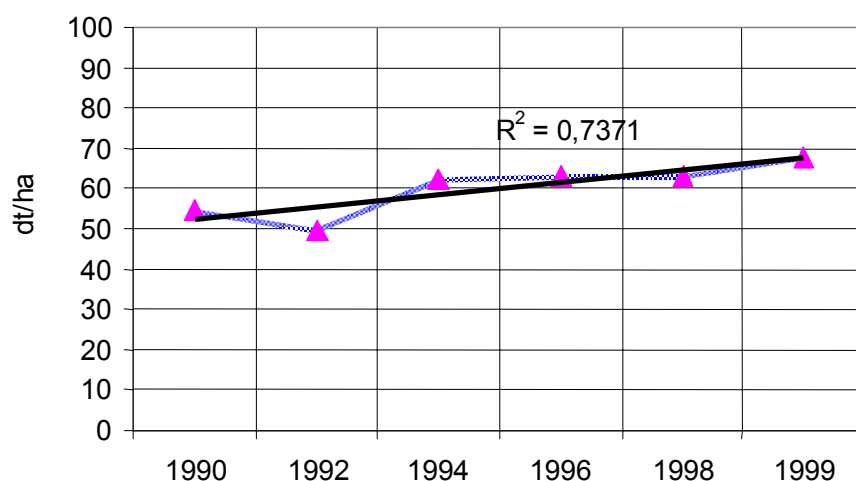
*But the set aside regulation in this respect supported the intensification, as predominantly lesser productive plots were taken from production and the share of high productive crops within crop rotation grew. The result was a concentration of variable inputs in the more fertile remaining areas.*

**Details of the Answer:**

In Thuringen, COP production increased between 1992 and 1999 by 43% even after the introduction of the set aside policy. The reasons were an extension of the cultivated area as well as clear increases in yields per ha (in the case of grain +5.3% per year), see figures 17 and 18.

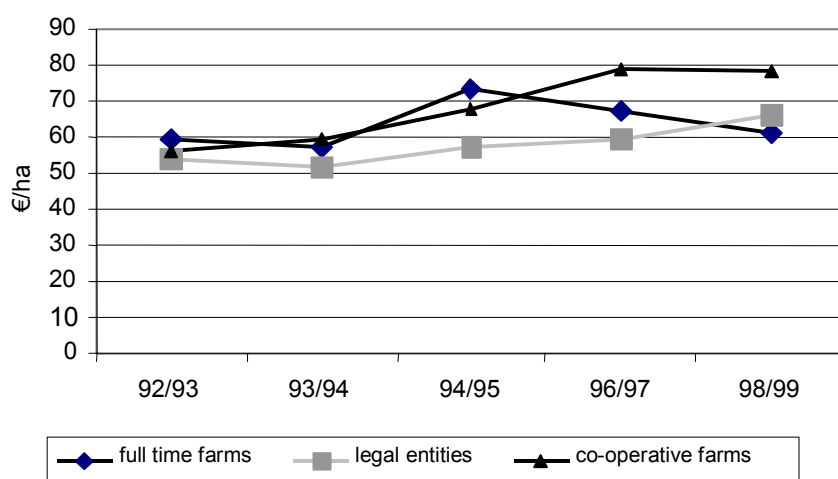
**Figure 17:** Yields of Selected Crops in Thuringen (dt/ha)<sup>26</sup>**Figure 18:** Development of Total Cereal Yield in dt/ha<sup>26</sup>

<sup>26</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, 2000.



The higher yields were achieved by an improved farm management in the first place. Of particular importance was the introduction of certified seed, the fertilizing on demand and better plant protection measures. Between 1992 and 1999, the real input of fertilizers and plant-protection means increased - from a low level - in all farm organisations (see figures 19, 20). The raise of yield increasing means since 1996 resulted to some extent from the expansion of non-food products, too. Despite of the set aside measure, only about 40 – 50 % of the entire set aside areas have been taken out of production every year completely (without any production).

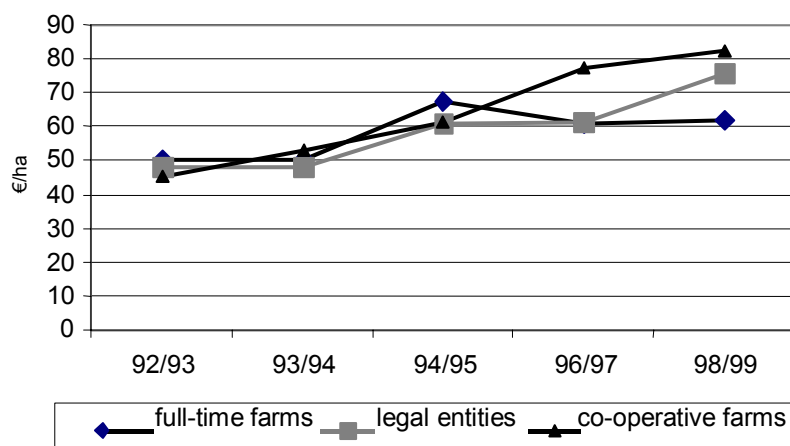
**Figure 19:** Fertilizer Input in €/ha UAA (constant prices, 1991 = 100) by Farm Organisations in Thuringen (farm account analysis)<sup>27</sup>



<sup>27</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, 2000.



**Figure 20:** Plant Protection Input in €/ha UAA (constant prices, 1991 = 100) by Farm Organisations in Thuringen (farm account analysis)<sup>26</sup>



The on-farm adaptations primarily resulted from the entire restructuring of the agricultural sector after the German reunification. The set aside supported this process and favoured a more intensive cultivation of the remaining areas. This is also confirmed by the answers of the 30 interviewed farmers. Accordingly

- 37 % out of this group increased the intensity of cultivation by using higher inputs,
- 57% of the farmers changed the crop rotation to the benefit of more profitable crops.

**Q. 4.3.4:** To what extent did the existence of the compulsory set aside modify the farm competitiveness by an adaptation of the productive structures?

**Synthetic Answer:**

*The obligation to set land aside hardly influenced the competitiveness of the smaller farms. Larger farms might be affected negatively most of all in the favourable sites. That is also true for those enterprises aiming at farm enlargement. That were above all larger family farms and co-operative enterprises. All in all, the economic effects of the German reunification on the competitiveness of the farming sector overlapped the (minor) influences of the set aside scheme by far.*

*60 % out of the interviewed farmers stated problems with the acquisition of additional land. Those problems concerned less the set aside measure than the general agricultural development. No significant effects on the level of rents could be counted.*

*To improve the competitiveness of their farms, half of the farmers expanded the most productive crops and/or reduced specific inputs. In about a third of the cases the remaining areas has been cultivated more intensively. The establishment of new entrepreneurial activities aimed at the stabilization of income.*

**Details of the Answer:**

#### **Development of Farms:**

11 farms (37 % out of the 30 interviewed) enlarged their farm land at approx. 118 ha between 1992 and 1999. Out of these 11 farms

- 4 farms (36 %) within the size class below 100 ha UAA enlarged at 21 ha each;
- 6 farms (55 %) within the size class from 100 up to 1000 ha UAA grew by 168 ha on average;
- 1 farm (9 %) with more than 1.000 ha of UAA rose by 212 ha.

The farm expansions above all occurred in the new established private enterprises ("Wiedereinrichtungsbetriebe"). On the other hand, the majority of the large-scale enterprises lost areas which they had to hand over to proprietors and/or to the new established farms.

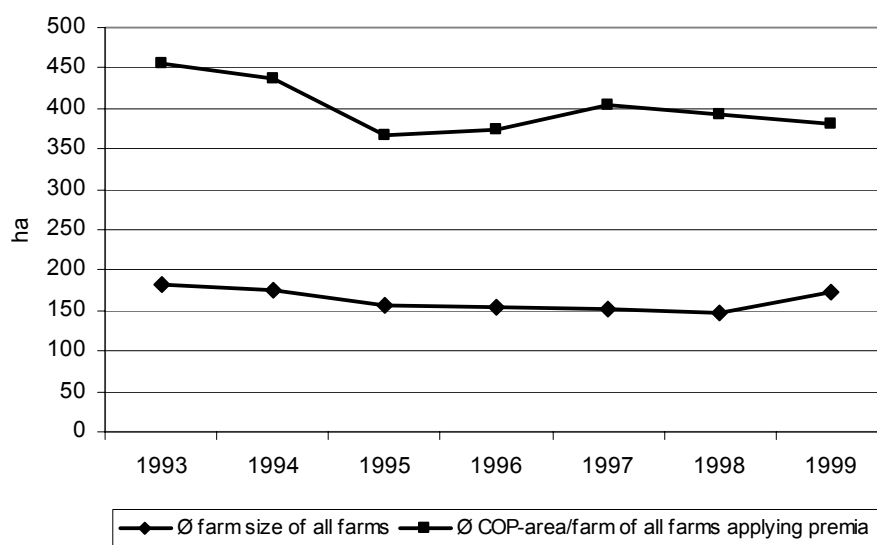
Lower farm size classes increased quite clearly since the CAP-reform (see chapter 2.1: Farm structure: figure 2). For the foundation of numerous farms, the following factors were above all decisive:

- The availability of land and farm equipment previously managed by the large-scale state and co-operative enterprises;
- The introduction of area based premia and other farm programmes (e.g. single farm investment aids);
- The generally low level of rents in the New German Laenders;
- The high unemployment in Thuringen.

About 38% of all farm enterprises with less than 1,5% of the UAA of Thuringen were not affected from the set aside programme directly. They applied for the simplified scheme. However, provided that a farm enlargement was planned, they also suffered from the (slight) rise of the general level of rents. It may be assumed, that the general upward trend of rents was accelerated through set aside.

All in all, the set aside policy did not change the competitiveness of the farms in the different size classes significantly. As far as farms got bankrupt or changed its farm size, above all the impacts of the former DDR economic system respectively the German reunification process were decisive.

**Figure 21:** Development of Average Farm Sizes of all Farms and of COP-Area of the Farms Applying Compensation Premia in Thuringen <sup>28</sup>



### Market for Arable Land:

The demand for additional farm land mainly came from the smaller family farms (new foundations) and the (larger) co-operative enterprises. The large-scale enterprises in the legal form of legal entities primarily tried to keep their size.

30 % of the interviewed farms leased additional land to cover the restrictions of the set aside programme. Only 7 % purchased land. All in all 60% (18 farmers) reported about problems of renting or buying additional land. However, this was ascribed primarily to the general market trend for farm land, less to the set aside scheme. Correspondingly only 17% of the interviewed farmers had the impression that a specific market for premium carrying areas would have developed.

<sup>28</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, 2000; own calculations.

A restriction of competitiveness resulting from set aside is to be expected in the more favourable sites only:

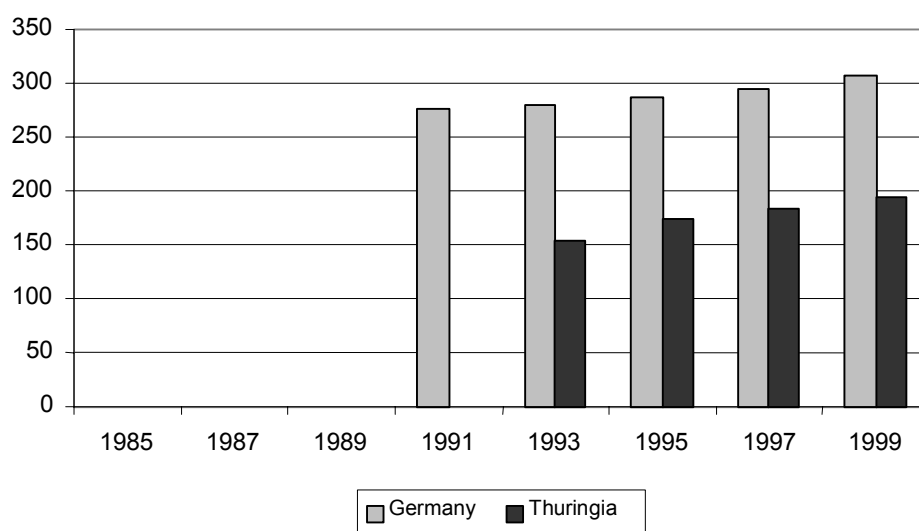
- On one hand, the level of rents increased in general (see figure 22), not least because of set aside;
- On the other hand, in the first years of the programme the prices for non-food rape were significantly lower than for food-rape. Since particularly the farms with the more productive areas cultivated rape, economic disadvantages resulted from that price difference.

Nevertheless, it was already mentioned that set aside caused agronomical advantages, because

- above all, lower productive and/or hardly manageable plots were taken out of production,
- the input level of the other factors (except farm land) could be adapted (see Q. 4.3.2).

In general, it may therefore be assumed that the competitiveness of the commercial farms was hardly influenced. That does not exclude that single farms aiming at farm expansion were faced with considerable restrictions resulting from set aside.

**Figure 22:** Development of Rents (€/ha) for Arable Areas in Thuringen and Germany<sup>29</sup>



#### **Adaptation to Set aside:**

50% of the interviewed farmers mentioned problems with set aside at the beginning of this measure. This proportion dropped down at about 30 % until the year 2001. The problems concerned primarily the abandoned appearance of the areas (80 %), weed infestation (67 %) and the timing of set aside during the vegetation period (47 %). The problems with weeds and parasitic attacks remain until today (44 %).

After the introduction of the set aside programme, 24 of the 30 interviewed farmers changed their activities and crop ratios. The following adaptations were chosen:

- Extension of high productive crops (57% of all farms): the farmers expanded the production of oilseeds (16 farms), cereals (11 farms) and protein plants (11 farms); in only few cases the cultivation of COP-crops was reduced.
- Reduction of yield increasing inputs (47 % of all farms); additionally the number of agricultural employees was reduced in 4 farms.
- Intensification of cultivation on the remaining areas (37% of all farms);
- Renting additional land (30 % of all farms);
- Purchasing of land (7 % of all farms);

<sup>29</sup> See Thueringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, 2000.

- On-farm diversification (e.g. farm tourism, direct marketing of farm produce) within 9 farms;
- Off-farm activities (e.g. commercial investments) within 8 farms.

### **Questions Concerning Environmental Impacts**

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

**Synthetic Answer:**

*The set aside predominantly had positive to neutral effects on the management of soils. The majority of the farms cultivated the set aside areas with specific crops for soil improvement and/or made use of the positive effects of rape as preceding crop within rotational set aside.*

**Details of the Answer:**

At the appraisal of the interviewers, set aside showed no significant impacts on soil management in 73% of the interviewed farms. In 23 % of the cases positive effects were achieved:

**Table 12:** Effects of Set aside on Land Management in Thuringen

	Negative effects	Neutral effects	Positive effects
Share of farms (total: 30 farms)	3.3%	73.3 %	23.3 %

Erosion on set aside plots was no significant problem in Thuringen, as large plots of set aside land has been cultivated with non-food rape, and fallow land without green cover was not allowed. The share of set aside areas cultivated with non-food crops varied between 36 % (1997) and 67 % (1999) (average: 53%).

14 % out of the interviewed farms participated in programmes for soil protection. Half of the farms improved the usability of its soils by sowing specific seeds for the loosening of the soils or the accumulation of nutrients.

**Q. 4.4.2: Did the adoption of set aside have a significant impact on the improvement of water management (pollution, water resources maintenance including ground waters, floods etc)?**

**Synthetic Answer:**

*Water management was not affected by land set aside (neutral: 87%). As far as an improvement of water protection was achieved that must be seen as a result of national/regional regulations.*

**Details of the Answer:**

Effects on the water management did not result in practice. In particular on areas with non-food-production, no modifications were to be found.

**Table 13:** Effects of Set aside on Water Management in Thuringen

	Negative effects	Neutral effects	Positive effects
Share of farms (total: 30 farms)	6.7 %	86.7 %	6.7 %

Irrigation of set aside land was not practised in Thuringen. As far as the remaining areas were irrigated, their management were not changed on account of set aside. 25% of the enterprises participated in agro-environmental programmes for water protection.

In the former DDR, a large part of the arable land was irrigated. Today the irrigation plants are mostly out of work.

The effects of modifications in fertilizing and plant protection on water quality are hardly to estimate. On one hand, the input of those means dropped at the set aside land on average; on the other hand, the respective expenses raised on the areas not set aside (see Q 4.3.3). Whether a positive, negative or neutral balance results depends primarily on the natural conditions of location (soil, rainfall etc.) and on the absolute input level of yield increasing means per ha.

Although an increased use of fertilizers and plant protection means is to be noticed (see figures 19,20), environmental risks are not to be expected. Compared to the amount of inputs applied in the western part of Germany, the respective level in Thuringen remained far below during the 90s.<sup>30</sup>

**Q. 4.4.3: Did the adoption of the set aside have a significant impact on the improvement of landscape management?**

**Synthetic Answer:**

*On the whole there is only a small negative effect of set aside on the landscape to be recognized (7%). An extensive local concentration of set aside areas only occurred sporadically. Provided that problems arose, they were due to incorrect cultivation. Then, above all, they became evident with the occurrence of problematic weeds (e.g. thistles, couch grass).*

*On average, 130 € per ha were spent for the maintenance of set aside areas without non-food production.*

**Details of the Answer:**

93 % of the interviewed farmers mentioned no negative impacts of set aside on landscaping. In particular on long term set aside areas a natural regrazing was practiced. If those areas were tended properly, no optical difference resulted to managed plots.

Only in the case of incorrect cultivation (e.g. too late mowing) or no exhaustive land planting, negative effects on the landscape can result. This was reported sporadically from lesser productive sites (e.g. Thuringer Wald).

20% of the farmers indicated that their set aside areas differ from the surroundings. The areas were concentrated in a specific part of the farms in 10% of the cases. However, only in one case, the set aside area showed a neglected impression - according to the farmers own appraisal.

**Table 14:** Effects of Set aside on the Landscape (estimated by the interviewed farmers)

	Negative effects	Neutral effects
Share of farms (total: 30 farms)	6.7%	93.3%

To maintain the set aside areas, farmers applied different cultivation techniques: cultivation with non-food crops, sowing of specific seeds, natural regrazing; Correspondingly, the maintenance expenses

<sup>30</sup> See Thuringer Ministerium für Landwirtschaft, Naturschutz und Umwelt: Bericht zur Entwicklung der Landwirtschaft in Thuringen, 2000, page 86.

for the areas differed considerably, not at least depending on climatic and soil conditions (amount of growth). The non-food production excepted (approx. half of the area), the interviewed farmers estimated the cost for land planting and related intercultivation measures at about 130 €/ha on average – with a range from 20 €/ha (natural regrazing) up to 350 €/ha (specific seeds).

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

**Synthetic Answer:**

*From an ecological point of view, land set aside had no significant influence on bio-diversity. More than half of the areas were cultivated with non-food crops and/or they were subject to regular measures for landscape conservation.*

**Details of the Answer:**

Due to the high share of non-food crops and the specific land planting, the effects on bio-diversity are rather little in general.

From the point of view of environmental administration, long-term set aside should be supported more intensely. It affects flora and fauna more favourably, provided that the diversity of the flora can be maintained over time. Dependend upon the natural conditions of location, mechanical operations (e.g. mowing, mulching) can be required in regular intervals to displace those plants (e.g. grass) which otherwise would edge less competitive plants out of the plant community.

Due to the different evolution of (wild) plant communities on different locations, cultivation of the set aside areas should be defined more precisely in order to achieve higher ecological effects. In this respect the measures should be adapted more narrowly to the regional context, so that the living space of animals is not destroyed e.g. by a too early mowing. In addition, the spreading of ecologically valuable herbs would also be supported in case of a later cultivation of the areas.

At their own appraisal, the interviewed farmers chose the following type of cultivation of their set aside areas :

- Land Planting (answers from 30 farmers):
  - 40 % sowed seeds for agronomical reasons;
  - 20 % sowed seeds for other purposes (e.g. to the benefit of bees or game);
  - 17 % applied natural regrazing;
  - 3 % (1 farm) did not meet the regulations (complete fallow).
- Management of set aside areas (answers from 16 farmers):<sup>31</sup>
  - 94 % (15 farms) mowed the growth of the set aside plots;
  - 25 % (4 farms) used chemical means against weeds;
  - 6 % (1 farm) cultivated the areas not before September;
  - 6 % (1 farm) applied complete fallow without green cover of the area.

The majority of operations on set aside areas were realized between June and October (see table 15). At the statements of the farmers, the first mowing was operated in late June so as to respect the breeding time of the majority of broodings on meadow and young mammals (e.g. deer, hares).

**Table 15:** Time of Operation on the Set aside Areas in Thuringen

	April	May	June	July	August	September	October
Number of Farms	0	0	9	5	4	3	2
Share of farms (total: 16)	0 %	0%	56 %	31 %	25 %	19 %	12.5 %

<sup>31</sup> No answers from farmers who chose non-food cultivation on their entire set aside area.

### **General comments from the environmental administration:**

At the appraisal of the regional environmental administration, the fixed set aside generally constitutes an enrichment of the landscape. The natural regrazing of the set aside areas without further utilization is estimated as the best management mean from an ecological point of view, provided the extent of set aside areas remains at the current level. In combination with e.g. the field margin programme ecologically rather effective nettings with the set aside areas have been developed.

### **Elements of Answers for Questions 451 to 452**

#### **Question Relating to the Complexity of Regulation and of its Setting in Place**

The following questions were answered in the German national report more in detail.

**Q. 4.5.1:       What effects did numerous regulatory adaptations and the existence of numerous individual cases have on the effectiveness of the set aside instrument?**

**Q. 4.5.2:       What effects did national or regional application legislations have on the effectiveness of the set aside instrument?**

43% of the interviewed farmers stated that the actually realized set aside measure forms an essential part of the CAP. However, only 17 % of the farmers agreed generally with the Common Agricultural Policy. This proportion was slightly higher in the larger farms (22 %) than in the smaller ones (less than 10 %).

As typical administrative problems were quoted by the 30 farmers:

- Precise measurement of the (often larger) set aside plots (13%);
- Minimum size of set aside areas (3%);
- Realization of the minimum yield of non-food crops (23%);
- Starting time and end time of set aside measure (30%);
- Too late information about set aside-rate and premium (30%);
- Laborious and/or complicated administrative procedures (23%);
- Insufficient co-ordination with other programmes (3%);
- Too late payments (33%).

Asked about improvements of the set aside policy, the 30 farmers gave the following recommendations:

- Abolition of set aside;
- Identic prices for food and non-food rape;
- Renunciation of minimum size of set aside areas and minimum yields for non-food crops;
- More flexible administrative procedures;
- Permittance to cultivate forage plants on set aside areas;
- Set aside on a voluntary base only;
- Simplification of controls;
- Permittance to use a rotary harrow for cultivation of set aside areas;
- Reduction of relative economic advantages larger farms gain from large-scale farming; differentiation of premia dependend from farm size.

### **Particular issues in Thuringen:**

#### **(1) Violations of the land set aside regulations:**

In the context of local controls, the responsible administration in 1999 only found 50 farmers, who realized the set aside scheme incorrect. Out of these, 46 cases referred to wrong information about the size of the plots. Another four farmers had to repay the entire premia, as the set aside areas

- were cultivated with grain (1.77 ha)
- had no land planting (11.8 ha),
- were treated with not allowed plant-protection means (7.8 ha).

The number of detected violations against the regulations in the previous years (1995 - 1998) lay between 7 to 39 with respect to all analysed farms.<sup>32</sup>

#### **(2) Recommendations for the improvement of the programme realization:**

The Ministry for Agriculture, Nature Conservation and Environment suggests:

- retention of a set aside-rate of 8 to 12%, in order to allow flexible reactions of the farmers on changed market conditions; generally a higher degree of continuity in the high of the set aside-rate;
- earlier information of the administration about changes of the regulations;
- improved co-ordination of the sanctions referring to incorrect size data and violations of cultivation regulations; in particular the loss of all area based premia in the case of wrong size information was criticized against the background of the larger farms.

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<sup>32</sup> See Thüringer Ministerium für Landwirtschaft, Naturschutz und Umwelt, Abt. 2.