

**Fifth Joint Conference on
Agriculture, Food, and the Environment**

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Dipartimento Territorio e Sistemi Agro-forestali

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**SESSION III: AGRICULTURAL SYSTEMS WITH LOW
ENVIRONMENTAL IMPACT**

**PAPER 1: ANALYSIS OF RESULTS FROM THE IMPLEMENTATION OF
REGULATION (EEC) 2078/92**

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FOREWORD

This volume contains the papers presented at the Fifth Joint Minnesota/Padova Conference on Food, Agriculture, and the Environment held at Abano Terme, near Padova in Italy, June 17-18, 1996. This conference was organized by the Center for International Food and Agricultural Policy at the University of Minnesota and the Dipartimento Territorio e Sistemi Agro-forestali at the Università degli Studi di Padova (University of Padova) under their international collaborative agreement, along with the Agricultural Development Agency - Veneto Region, the University of Perugia, and the University of Bologna - CNR. The first Joint Conference was held in Motta di Livenza, Italy in June 1989, the second in Lake Itasca, Minnesota in September 1990, and the third in Motta di Livenza in June 1992. The Fourth Joint Conference was held in September 1994 at the Spring Hill Center in Minnesota.

This conference focused on topics of mutual interest in the areas of (1) agricultural and resource policy, (2) land markets, (3) the food and agricultural industry, (4) agriculture and the environment, and (5) agricultural production and environmental quality and sustainability. Although the conference was not intended to provide a comprehensive coverage of all the issues, this volume hopefully represents a useful contribution to current understanding and debate in the areas of food, agriculture, and the environment.

Judy Berdahl, secretary for the Center for International Food and Agricultural Policy at the University of Minnesota, assisted with these Proceedings.

Benjamin Senauer
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ANALYSIS OF RESULTS FROM THE IMPLEMENTATION OF REGULATION (EEC) 2078/92

by

Alessandro Ragazzoni (*) and Maurizio Canavari (**)

Fifth Joint Conference on
AGRICULTURE, FOOD AND THE ENVIRONMENT
held at the University of Padova, June 17-19, 1996.

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1. INTRODUCTION

In 1992 the reform of the CAP reached a turning point, by "decoupling" the intervention on market prices (which are going to be brought closer to the international ones) from income support (carried out through compensatory payments). Along with this main feature, the importance of environmental issues has also grown within the CAP and now plays a relevant role.

This paper is concerned with analyzing the CAP policies involving environmental issues and simulating probable results at a farm level of the adoption of agri-environmental measures.

1.1 Adhesion to the agri-environmental measures

A tool for implementing the new "environmentally correct" approach has been the implementation of regulations, aimed at reducing stocks and favouring a less intensive use of soil.

In particular here we consider the following measures and the extent to which they have been adhered to, namely:

- the "voluntary" set-aside program, effective before 1992;
- the "obligatory" set-aside regulation;
- the agri-environmental measures.

The "set aside" measure was first introduced by the Reg. no. 88/1094/EEC; it consisted in voluntarily withdrawing field crop acreage for five years, for which compensation payments were obtained from the EU.

After a slow start, the set-aside program has registered a relatively high rate of adhesion from the farmers. Table 1st shows the surface data relating to each country, revealing the important share assigned to Italy. This measure has failed the objective of reducing crop production, because the withheld surfaces were mainly the marginal and less productive (or sometimes fallow) ones. At the same time the goal of lessening the inputs levels was substantially failed.

The regional distribution in Italy of the adhesions to the program, shown in Table 2nd, confirms its adoption in the marginal areas and in the regions where a less intensive agriculture is mainly carried out.

It may be pointed out that the voluntary set-aside program represented a "shelter" (Amadei, 1994) and an opportunity for many part-time and non-professional farmers, given that the larger farms did not show an interest in the program.

A reverse trend may be noted after 1992. The compulsory set-aside program introduced by Reg. 92/1765/EEC has found little application in Italy, probably as a result of two main factors, namely:

- the average size of farms, which were such as to permit most of the Italian farmers to choose between general and simplified regime;
- farm structure constraints, for which a shortage in acreage gives rise to an increase in fixed costs given a certain farm organization.

The effects of the program on outputs and stocks have been on the other hand considerable as the most productive and profitable surfaces were affected. The reduction of input levels is, instead, still controversial and many authors point out that is «impossible to reconcile the two purposes of set aside: control of supply and environmental conservation and enhancement» (Ferro, 1996, p.21).

The data collected by the EC illustrates the situation at the European (table 3rd) and the Italian level (table 4th).

In 1992 a set of accompanying measures was also introduced, namely Reg. 92/2080/EEC and Reg. 92/2078/EEC, aimed respectively:

- at promoting the afforestation of agricultural land, and
- at favouring more environment-friendly and sustainable agri-techniques.

With regards Reg. 92/2080/EEC in support of the afforestation of rural areas, the aim of the Commission was to promote the creation of a less simplified agri-eco-system in which agricultural activity comes to be in harmony with the conservation of a rural landscape while also being compatible with the maintenance of an overall ecological equilibrium.

The results of the implementation of those measures in most of the Italian regions (Table 5th) show that they have been fairly successful, even if the data available is not yet complete. It should be noted that the expenditure ceiling may represent a problem, as in some regions the budget limits for a three-year period have already been reached and sometimes overcome. To cope with such situation a fund redistribution program, in accordance with the number of applications and the surface area involved, will probably have to be adopted.

These measures are aimed at achieving a number of goals amongst which:

- the use of less intensive and impacting agri-techniques,
- the promotion of extensive growing practices,
- support for the maintenance of forestal and marginal soils,
- the encouragement of the multi-purpose use of agricultural soils, by the setting up, for example, of outdoor recreation activities for the public within the farms.

Reg. 92/2078/EEC contains several alternative actions to be implemented by the farmer, such as integrated (A1) and organic (A2) agriculture; extensive field crops (B); extensive husbandry (C), twenty-years long set-aside (F), outdoor recreation (G) and others.

The general and complete implementation of this regulation is hampered by a number of problems, causing a partial and unequal adoption on a nation-wide basis. One of the reasons is due to the fact that the local authorities have to go through a complex procedure before their zonal plans can get approved by the Commission, and this may cause some delay.

The actual obligations incumbent upon the farmers themselves owing to regional regulations implementing these schemes are a further hindrance to the adoption of the necessary actions. Such requirements are often too restrictive and over-detailed so that the farmer needs the aid of an external (and expensive) administrative advisory service. In fact, as far as the controls are concerned, a considerable number of written reports describing the agri-technique adopted for each crop have to be drawn up.

Many differences relating the permissible input levels adopted in the various regions (for example, nitrogenous fertilizers, pesticides, etc.) can also be noted, so that these represent yet a cause of uncertainty and unequal treatment.

Despite such a situation, a certain number of farmers have applied to join the program. Within the Emilia-Romagna region (table 6th), the implementation of regulation 2078 has involved a surface area of about 30 thousand hectares and 2 thousand livestock units. The action most adopted is clearly the A1 (integrated agriculture), accounting for 50% of the applications and 75% of the surface. This regional trend is confirmed in the provinces of Bologna and Modena.

1. 2 Simulation of the farm level effects

The following part of the paper deals with a simulation at the farm level, analyzing the farm data collected in a specific plain area in the Emilia-Romagna region. The study compares the results of productive activity for field crops in several medium to large sized farms located in the Modena Po valley area and analyses the convenience of implementing the agri-environmental programs contemplated by the CAP reform.

In particular, the study is aimed at evaluating the profitability and economic sustainability of such activity in terms of the capacity to reintegrate the factors employed in the production process and to remunerate the main economic operators involved. In detail, the study entails three main sets of analytic operations, namely (Di Cocco, 1989):

- **assessing farm production:** assets are calculated by determining the amount produced and the price fetched on the market for each single commodity. After the CAP reform, returns from crops are subdivided into a quota which is *proportional* to the amount of product obtained and a *fixed* quota per hectare which is subject to change only in relation to the area where the farm is located and to the type of crop grown;
- **assessing the costs of reintegrating capital outlay:** liabilities are calculated by determining the *costs* relevant to the main means of production subject to total depreciation (fertilizers, pesticides, seeds and so on) and the *quotas* relevant to land and financial capital (buildings, investments, and so on) and to farm capital (machinery, stocks, and so on);
- **assessing the distribution of net farm income:** this operation entails calculating total income distribution amongst the main farm operators supplying either labor or capital. In particular, net income (NI) (understood as the total incomes remaining to the farmer after deduction of the costs for reintegrating capital outlay and compensation to the economic operators other than the farmer as such) is calculated by deducting the balance sheet items not pertaining to the farmer from the net farm product (Net farm income = $PV - Q - TE$).

Monetary values, whether referred to the traditional agritechnique or to action A1 of EEC 2078 Regulation during the first year of implementation, are based on the current prices for the 1994-1995 period. Moreover, a way had to be found for precisely allotting the specific costs to each single crop in order to evaluate the differences between the results obtained with the traditional agritechnique over the four-year period (1991-1994) and those obtained with the practices required by action A1 (year 1995), both implemented

on the farm. The data thus obtained were then recorded as aggregate values in the farm balance sheet so as to determine the net overall and separate unit incomes for the different farming practices.

Before analyzing the results, it is worth providing general information on the requirements contemplated by the EEC 2078 Regulation of 1992 for the area under study.

In particular, **action A1** of the EEC 2078/92 Regulation aims at an average reduction of 30% in the use of fertilizers and pesticides with a view to promoting crop growing techniques which, while reducing product supply, are also capable of reducing environmental impact. More specifically, the requirements to be complied with by the farmer implementing action A1 on the entire farm area include:

- *reduction in the amount of nitrogen* annually spread per hectare according to the crop rotation pattern adopted, the existing soil type and the expected yield for the type of crop grown;
- the drawing up of a plant protection schedule made out according to *prescribed production schedules*;
- *extension of crop rotation to five years*, which means that at least four years must expire before the same crop may be grown on the same field again.

In support of these measures, which tend to reduce the use of chemicals and consequently unit production, incentives were granted on a pro-hectare basis by the regional authorities and by the EU to the farmers involved in implementing action A1. The following data shows the amounts granted according to this scheme.

Kind of areas	Annual crops (Regulation EEC no. 1765/92)	Other annual crops and pasture - land	Olive groves	Other perennial crops and vineyard
	ECU/ha	ECU/ha	ECU/ha	ECU/ha
<i>Ordinary areas</i>	90	160	260	450
<i>Preferential areas</i>	130	200	320	560

2. A CASE STUDY: IMPLEMENTATION OF ACTION A1 OF REGULATION (EEC) 2078/92 IN MEDIUM TO LARGE SIZED FARMS

The farmers in the Modena Po valley were keen to undertake the regional agri-environmental programs contemplated by the EEC 2078/92 Regulation.

Scope of the survey conducted in this area was to analyze the costs and revenues after the first year of implementation of Action A1, which intended promoting integrated agricultural practices. These results were then compared with the average costs and revenues for several *grand cultures* such as sugar beet, winter wheat (soft), corn and soybean grown according to so-called *traditional* agritechnique.

In particular, the analysis was made with a view to evaluating the convenience of implementing the recommended farming practice (Figure 1). This analysis entailed examining the main differences in production and variable costs involved in the hypothesis of the area concerned being set aside without any alternative so-called no-food crops being grown.

The simulations were conducted by reclassifying farm assets and liabilities on the basis of the *final financial statement*, hypothesizing the adoption of the various programs in a farm of about 50 hectares with tendentially clayey-loamy but fairly fertile soil mostly suitable for the full field crops located in the survey area ¹. Generally speaking, the object of the final statement is to determine the difference between revenues and aggregate production costs. The *difference* in income to be determined represents the aggregated incomes of the various economic operators involved in the farm. It is therefore necessary to break down this aggregate so as to determine the net income of the entrepreneur. Aiming towards the creation of a viable farm means defining the conditions capable of ensuring that production costs are paid back at market prices so as to generate a non-negative result (Prestamburgo-Saccomandi, 1995).

A number of assumptions applicable to the innovative agritechnique was made for the purpose of analysis, namely:

¹ In choosing the actual medium to large sized farm in a precise area, two main guidelines were followed:

1. The production programs contemplated by the EEC 2078/92 Regulation are specific to each region and type of soil especially with regards the use of fertilizers and pesticides.
2. One of the objectives of the agro-environmental programs is to promote extensive production and to reduce the impact of farming techniques. Such an objective can be achieved in medium to large sized farms as these are capable of adopting the required rotation patterns (consisting of at least four crops) as well as being particularly suitable to the cultivation of field cereal and oil bean crops.

- The farm has a usable surface area of 48.5 ha with a five-year crop rotation over four field crops: corn, winter wheat, soybean and sugar beet. The extent of idle land is the same each time with a no-food crop being grown (Figure 2);
- As a “large producer” the farmer complies with 1765/92 Regulation, being thus obliged to set aside 10% of the used farm surface area for which incentives are applied for;
- The traditional agritechnique, for which reference is made to the average economic results of the last four years, is replaced by the constraints imposed by Action A1 with regards duration, succession, fertilization and pesticide treatments;
- As machinery capital composition cannot be changed over the short period, it is assumed that, except for harvesting, all farming operations according to the new farming practices are carried out using existing machinery;
- External labor being required both in the case of *traditional* and *integrated* agritechniques, seasonal workers are taken into account in both cases according to the number of hours necessary for the performance of the various farming operations involved. As far as the administrative costs entailed by adoption of the innovative farming-environmental programs are concerned, a fixed annual cost is assumed for the entire farm surface;
- The farmer works in conjunction with the hired workers both in the farming and administrative operations;
- Finally, the farmer does not make recourse to loans so that interests represent revenues on the capital invested by the farmer.

The results of the analysis of the main items in the financial statement relevant to the agritechniques associated with the implementation of EEC 1765 and 2078 Regulations (Action A1) are set out and compared. In particular, these items include: production returns and incentives in relation to assets, and variable and fixed costs in relation to liabilities. Additional considerations as to net income composition for different types of entrepreneurial figures are also made.

3. ANALYSIS OF FARMING RESULTS

As far as farming costs are concerned, several significant differences may be noted regarding the implementation of the integrated agritechnique prescribed by Action A1 of EEC 2078/92 Regulation.

Variable production costs are significantly lower. With regards fertilization ², they are on average 50% lower (except for soybean, for which fertilization is not allowed) while the use of pesticides and herbicides is 13% less for sunflower and as high as 78% less for winter wheat (Table 7th). Moreover, the reduction of farming operations led to a reduction in fuel consumption, ranging from 5% (for sugar beet) to 12% (for wheat) as well as in labor employed, ranging from 6% (for corn) to 17% (for soybean). Similarly, machinery hire costs (that is, with reference to harvesting) diminished proportionally to the decrease in the unit product yield from a minimum of 14% for corn to a maximum of 28% for soybean.

With regards unit production, a decrease was reported with respect to the average harvest over the last four years, ranging from 14% for wheat and corn to 28% for soybean. Notwithstanding these results, the differences between the average yields for the 1991-1994 period and the first year of implementation of EEC 2078/92 Regulation need to be looked at more closely. In particular, the yields over the entire five-year period need to be examined taking into account the climatic factors affecting unit yield variability (Figure 3).

As can be seen in Figure 4, EEC incentives for reduced unit yield have practically compensated for the loss in marketable produce for all the four crops.

The analysis of **net income** distribution amongst the various economic operators which refer to the entrepreneur was made for the purpose of determining the compensation levels for the various production factors (real estate and financial capital, labor, and so on).

The **net farm product** obtained by implementing Action A1 was found to be 5% greater than that obtained with traditional agritechniques. In fact, albeit sales value dropped by **3.8%**, this was more than offset by the marked overall reduction of **18%** in trading expenses (Table 8th). A look at the various cost items relating to the farm operators shows that overall farm costs were over **9%** less for the variable and fixed ones considered together and **13.5%** less for the variable ones alone.

An analysis of the net unit income referred to the entrepreneur, who may be represented by a number of different economic operators, reveals in all cases an increase in value following on the implementation of Action A1 (Figure 5).

² It is important to note that the regional regulations establish a maximum permissible amount of fertilizers. According to these regulations, each farmer must have the soil analysed and, on the basis of the type of soil, of the crop succession and estimated yields, determine the maximum amount of fertilizer which may be used for each crop and plot.

The **convenience threshold** (Table 9th), which is an indicator of the “breakeven” point between overall costs and sales value inclusive of the total EEC incentives deriving from the implementation of various regulations, was calculated for each crop³. This threshold was found to be greater in the case of traditional agritechniques for all crops considered, different sales values being required in order to reach the breakeven point⁴ ranging from about 500,000 Italian lire per hectare (for winter wheat, corn and soybean) to about 900,000 Italian lire per hectare (for sugar beet). It is interesting to note that with regards soybean the sum of revenues from incentives was almost equal to total costs when Action A1 was implemented.

If the analysis is made on the basis of unit yields with the sales price of the produce being introduced as a variable, the results appear to be particularly significant when compared with the average farm yield over the four-year period 1991-1994 under *traditional* farming and with that of 1995 under *integrated* farming (Figures 6, 7, 8, and 9).

Several considerations as to these results are worth making:

- the threshold level is abundantly exceeded for three crops (winter wheat, corn and soybean) for both traditional and integrated agritechniques;
- vice versa, the sales value of sugar beet in the last year with Action A1 being implemented and the average sales value over the four-year period under traditional farming were found to be lower than the minimum value required for economic convenience to be attained, calculated on the basis of the reference sales price. The convenience threshold is attained when the product was sold at a price comprised between the minimum and the average price guaranteed by the relevant trade association;
- with regards soy-bean and corn, the incentives ensure the sales value of a fixed production quota so that the production threshold limit of the area is considerably reduced, a limit which can be easily reached even in the most unfavorable growing years.

4. FINAL CONSIDERATIONS

The 1992 CAP reform was intended to encourage and promote less intensive farming with favorable environmental repercussions. The promotion of quality farming which has

³ The total costs pertaining to the area compulsorily set aside and the incentives deriving thereof were redistributed over the various crops. The convenience thresholds, therefore, are inclusive of the costs and revenues of the set-aside area.

⁴ The simulation was conducted on the basis of the production yields and sales prices of the 1994-1995 agricultural year.

the twofold objective of improving the farmer's income and of ensuring quality products for the consumer is also a way of harmonizing farming practices with environmental viability.

A few general indications may be given with regards farm organization and crop sharing patterns (Grillenzoni-Ragazzoni, 1995). Depending on the degree of so-to-speak natural farming that is aimed for, different crop sharing patterns may be envisaged. In particular, a number of alternative crop combinations based on recommendations and set-aside requirements contemplated in EEC regulations may be considered. These combinations, corresponding to different productivity and environmental protection levels, are schematically shown in Figure 10.

In detail:

- Box A shows two types of biannual crop rotation patterns adopted in the area implementing EEC 1765/92 Regulation, no crop not even of the *no-food* kind being contemplated for the *set-aside* area in this case;
- Box B shows two examples of rotation patterns with a wider range of crops, the main purpose of which is to obtain high unit yields from the cultivated farm area. In this case, the *set-aside* area is cultivated under *no food* sunflower and sorghum. This rotation pattern includes the main full field crops grown in the survey area;
- Box C gives two examples of rotation patterns with an even wider range of field crops. The farming practices adopted in this case are of the integrated type as contemplated by action A1 of EEC 2078/92 Regulation. The set-aside area may either be used for *no food* crops or for flora and fauna protection purposes;
- Finally, box D shows a combination of the patterns contemplated in action A1 of the EEC 2078/92 Regulation and in the EEC 2080/92 Regulation, the latter of which envisages the possibility of reafforesting part of the farm surface with timber trees (such as broad-leaved trees and/or mixed woodland). Crop rotation is governed by the production program contemplated by EEC 2078/92 Regulation and the *set-aside* area may be dedicated to the growth of poplar groves (according to EEC 1460/95 Regulation).

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FIGURE 1 - SCHEME OF THE ANALYSIS

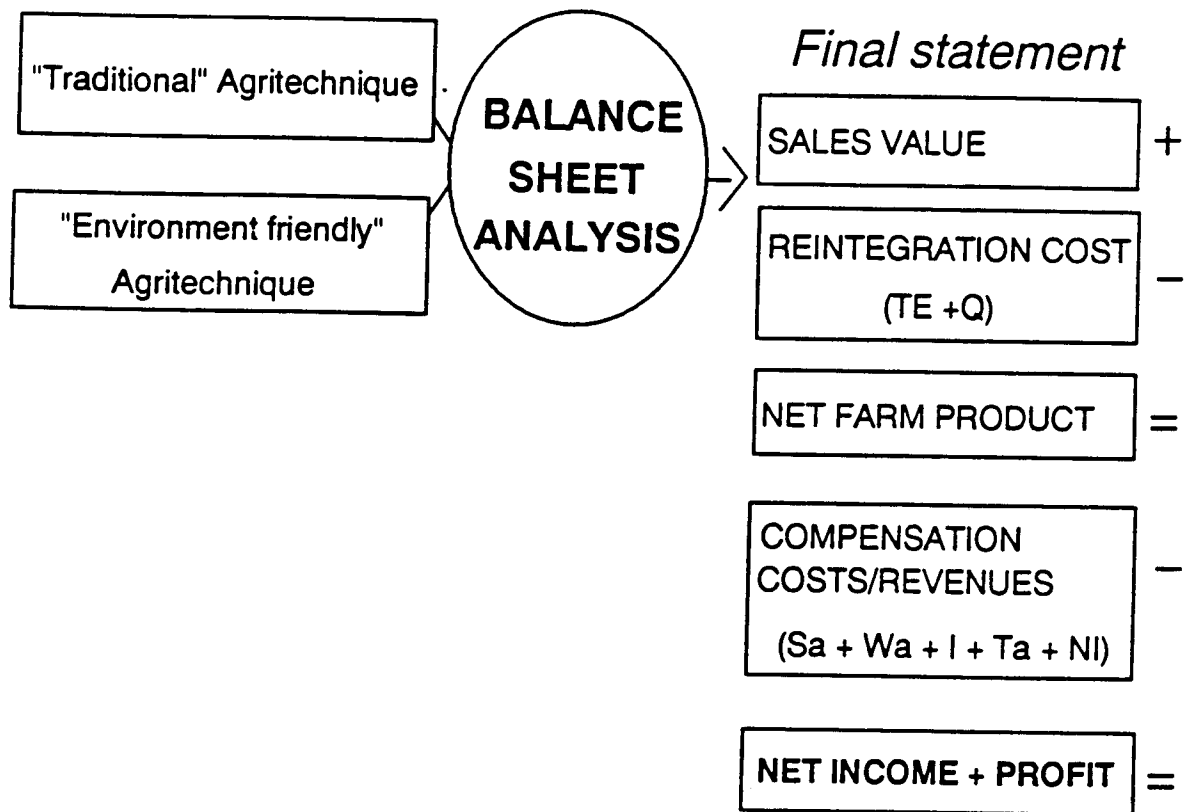


FIGURE 2 – CROP SHARING

Used farm surface area

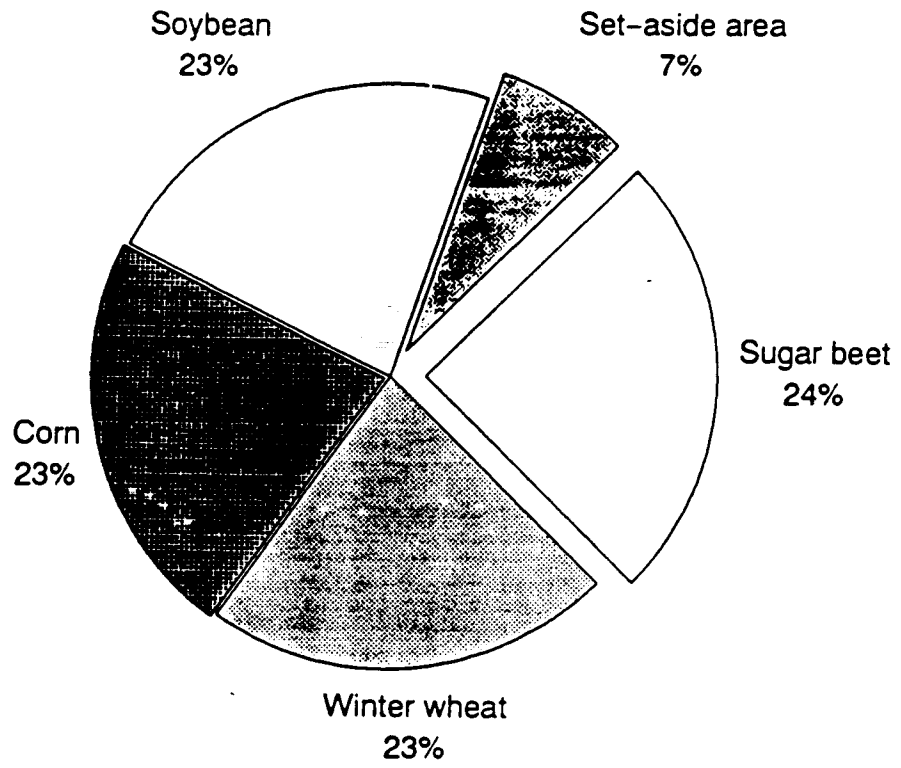


FIGURE 3 - YIELDS IN THE SURVEY AREA (1991-95 PERIOD)

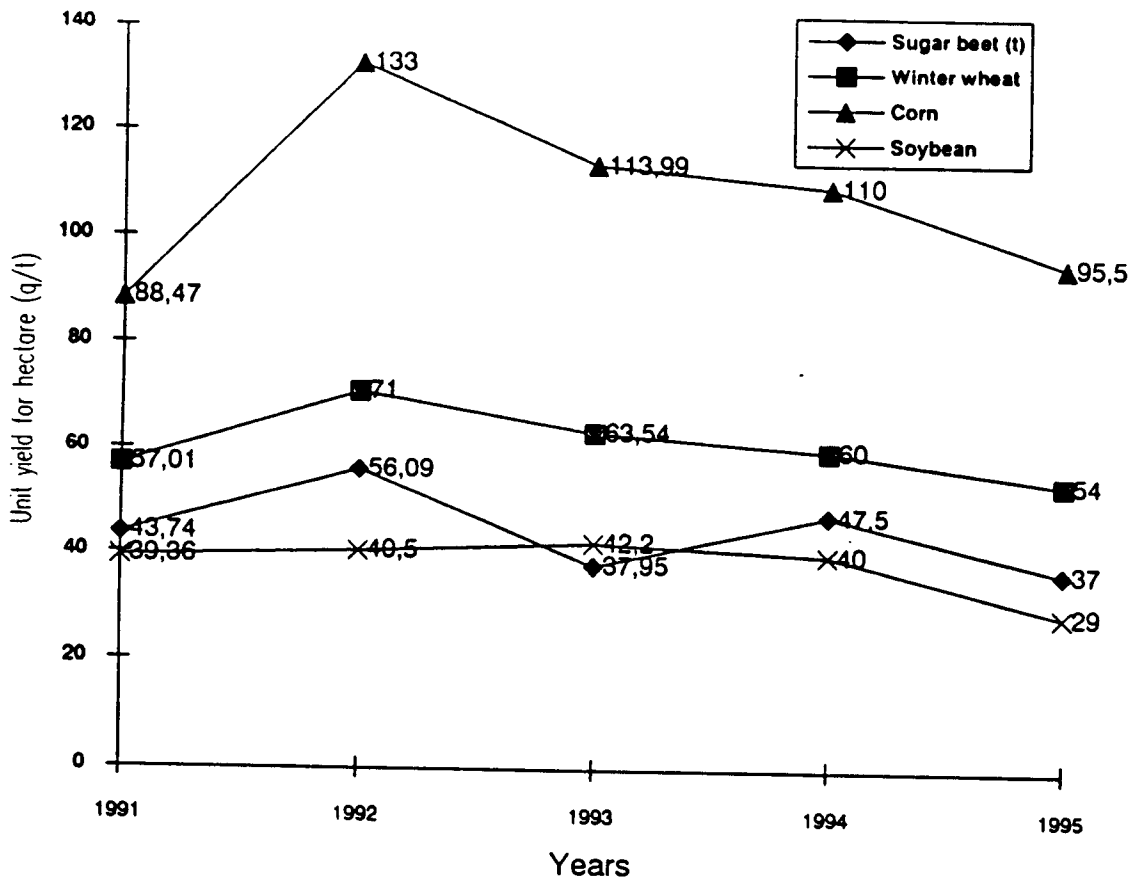


FIGURE 4 - SALES VALUE INCLUDING EEC INCENTIVES

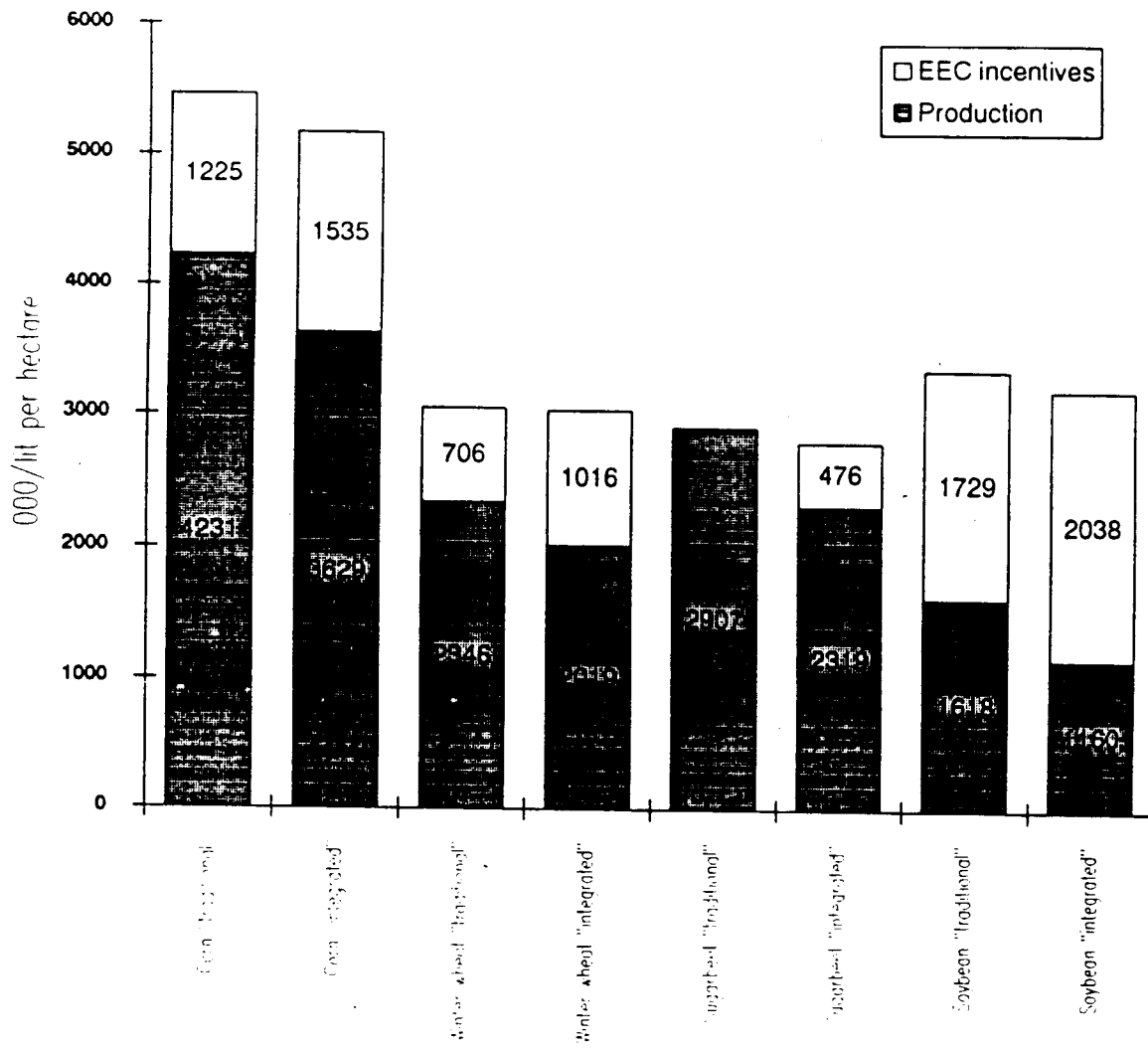


FIGURE 5 - ESTIMATES OF NET INCOMES

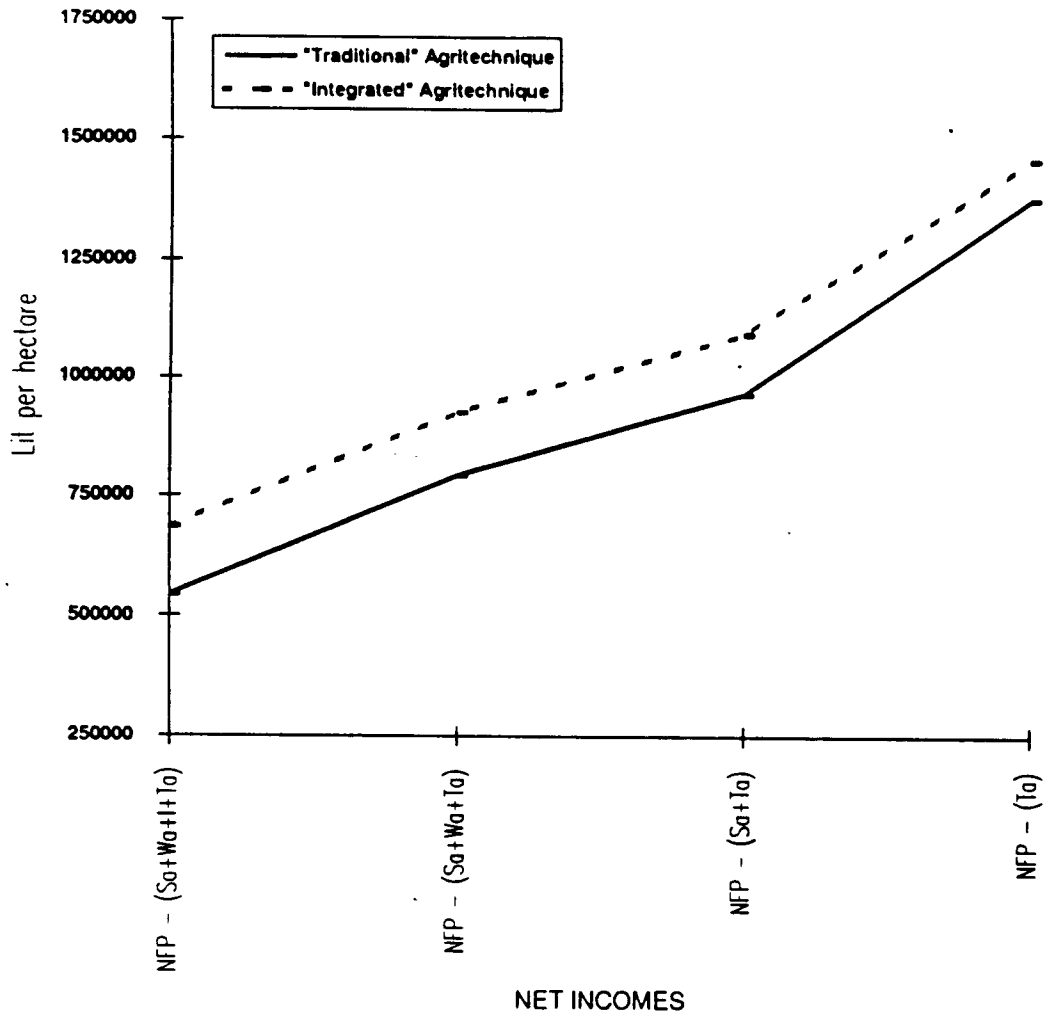


FIGURE 6 – THRESHOLD PRODUCTION LEVELS FOR SUGARBEET

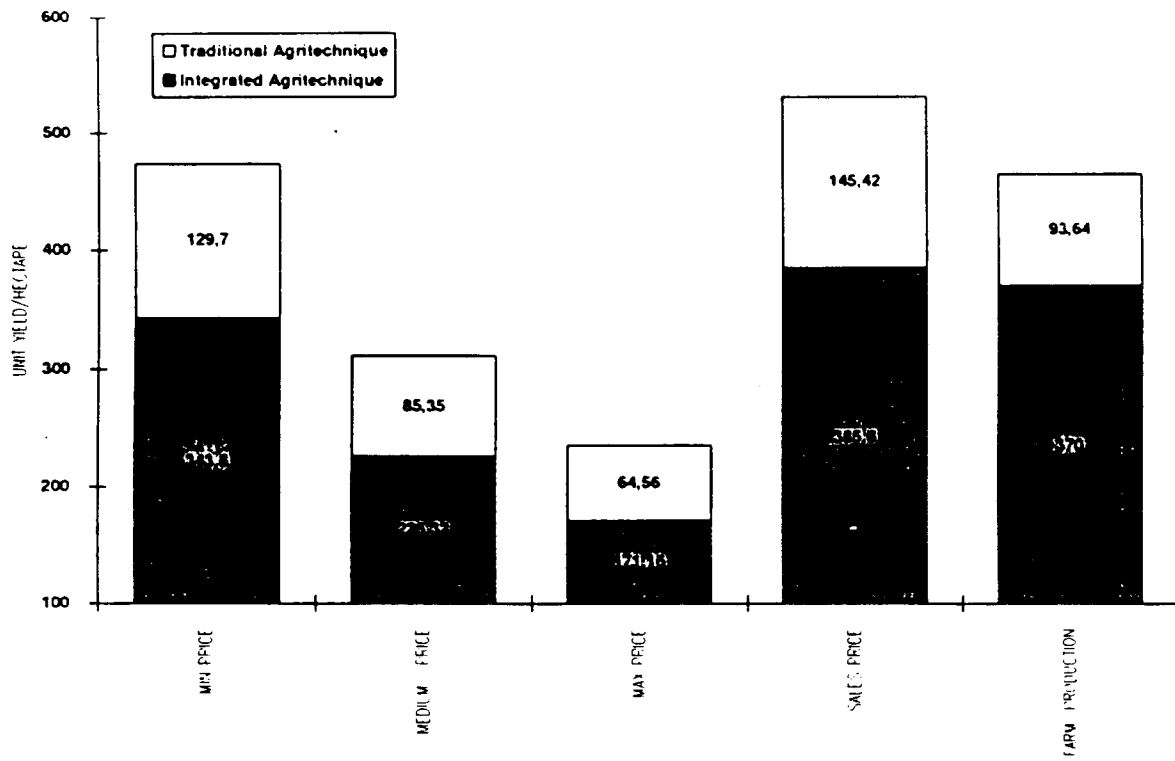


FIGURE 7 – THRESHOLD PRODUCTION LEVELS FOR WINTER WHEAT

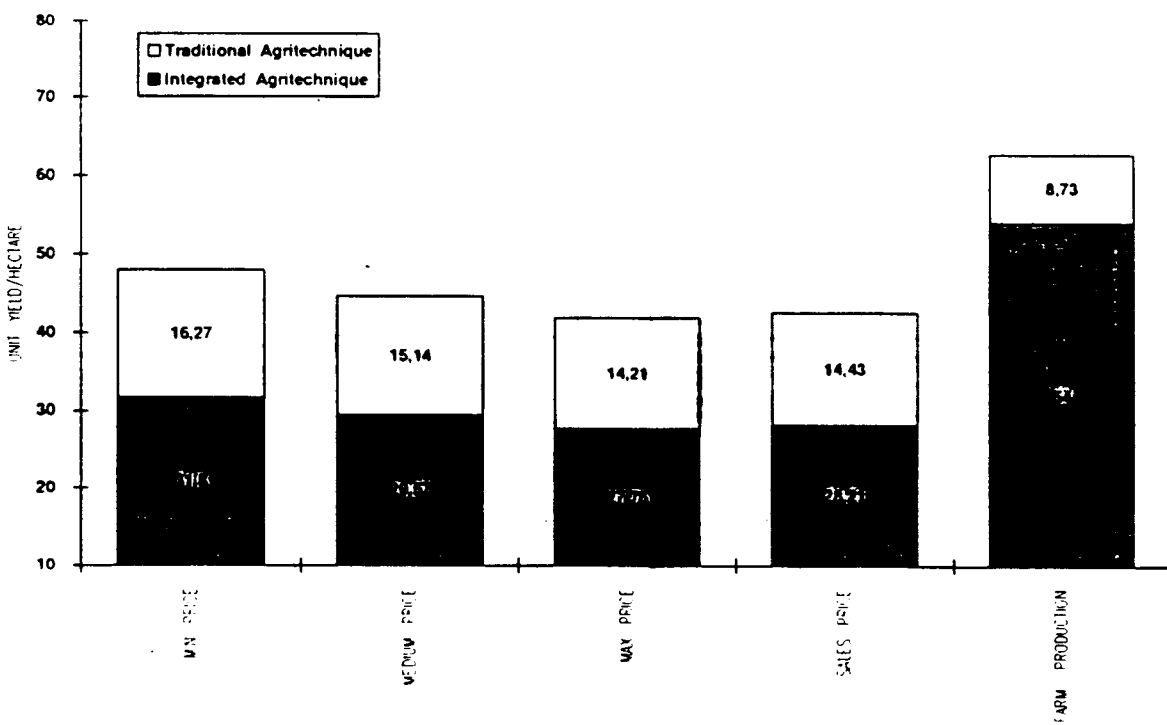


FIGURE 8 - THRESHOLD PRODUCTION LEVELS FOR CORN

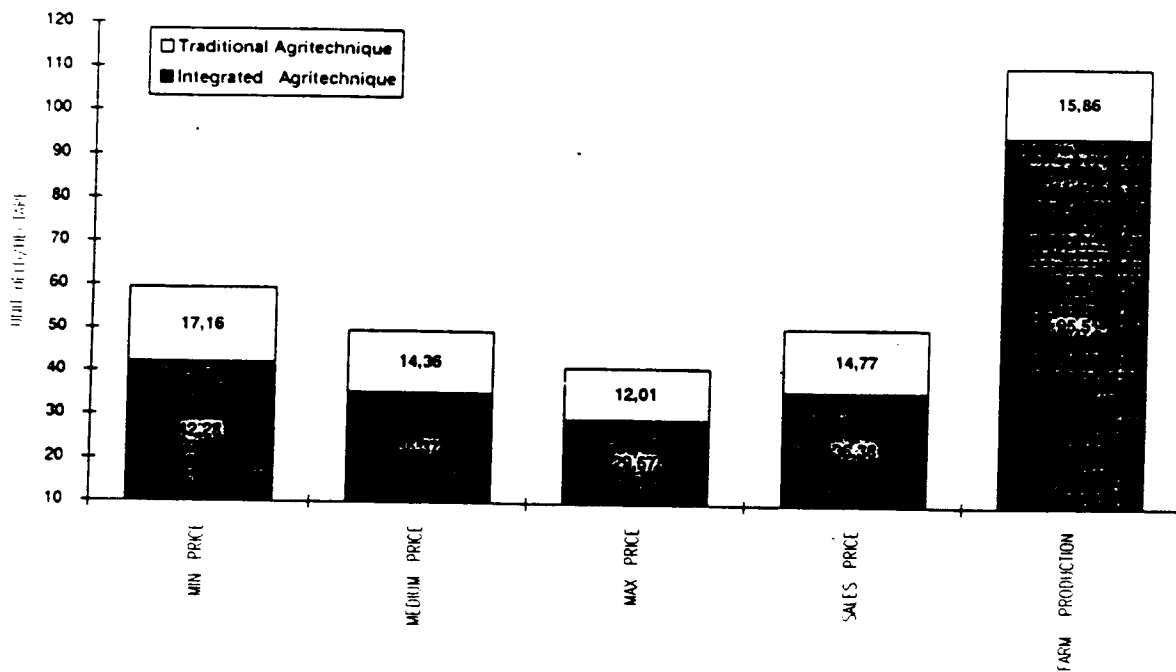


FIGURE 9 - THRESHOLD PRODUCTION LEVELS FOR SOYBEAN

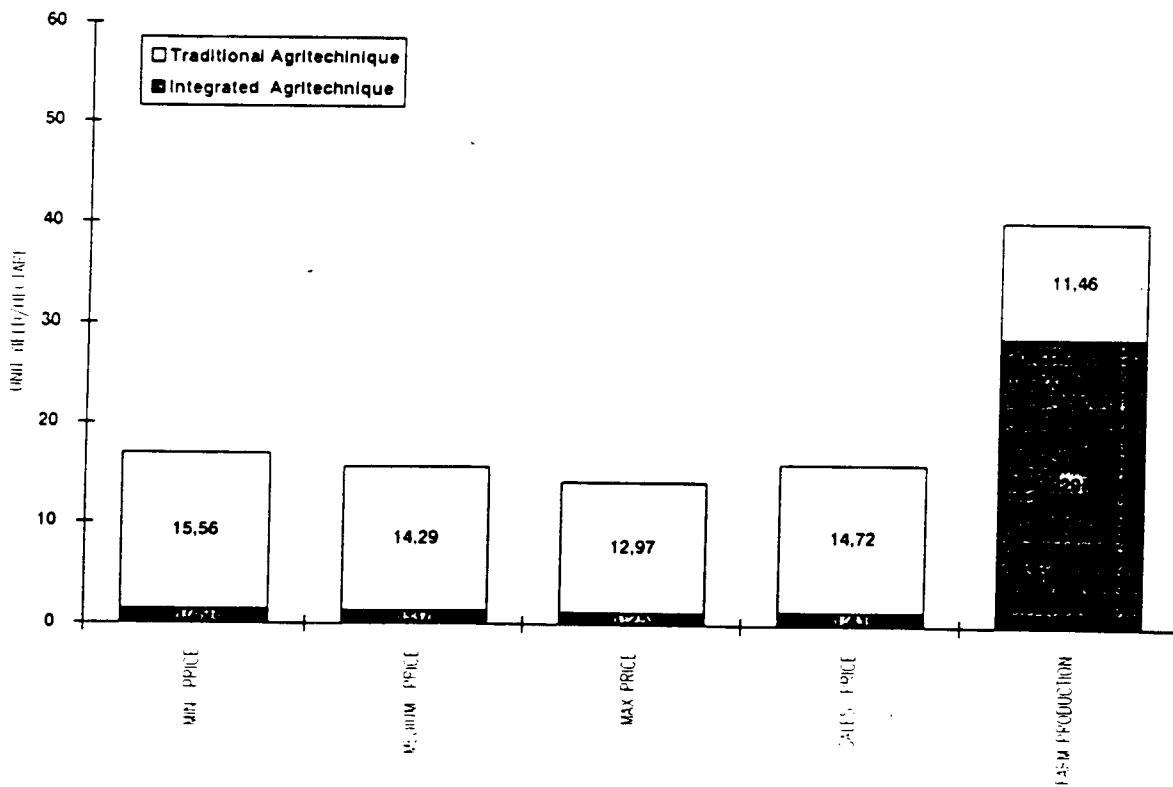
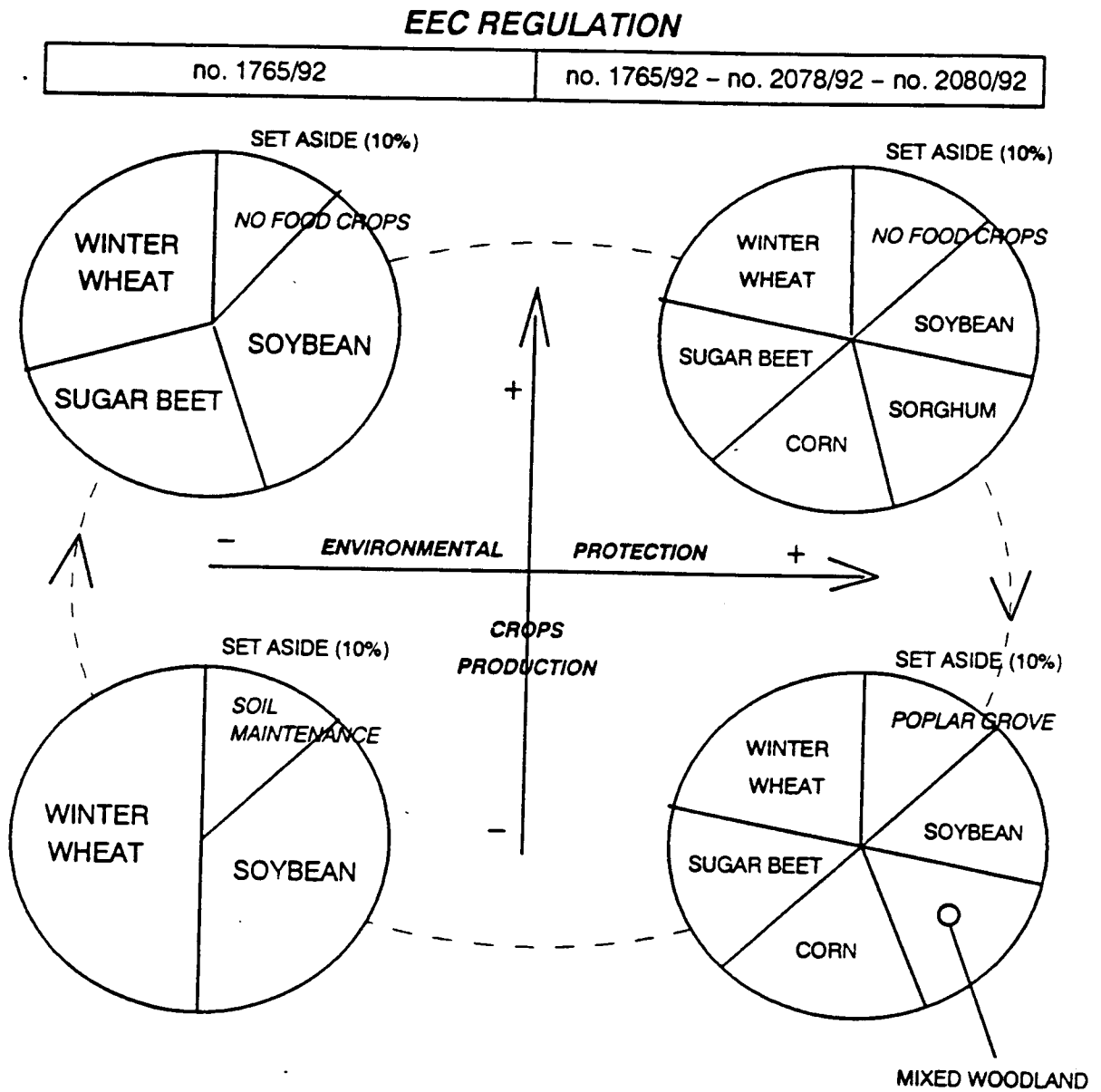


FIGURE 10 – CROP SHARING FOR DIFFERENT PRODUCTIVITY AND ENVIRONMENTAL PROTECTION LEVELS



Source: Grillenzoni M. Ragazzoni A. (1995), "Lo sviluppo sostenibile in agricoltura: valutazioni di operativita' nel Comprensorio della Bassa pianura modenese", Comune di Mirandola, Tecnoprint, Bologna.

Table 1 Application of the voluntary set-aside program in the EU countries

	Set aside surface (hectares)					Share (%)
	1988-89	1989-90	1990-91	1991-92	total	
Belgium-Luxembourg	386	149	270	166	971	0,1
Denmark	-	-	4.596	8.217	12.813	0,7
Ireland	1.141	438	187	1.686	3.452	0,2
France	14.220	39.702	112.653	68.917	235.492	13,2
East Germany	-	-	-	104.885	104.885	5,9
West Germany (a)	167.775	52.208	79.854	74.538	374.375	21,0
Greece	-	250	250	213	713	0,0
Italy	93.756	234.972	252.271	207.488	788.487	44,2
Portugal	-	-	-	-	-	-
Spain	25.047	13.858	28.264	26.000	93.169	5,2
The Netherlands	2.535	5.919	6.667	252	15.373	0,9
United Kingdom	52.090	48.810	28.594	23.206	152.700	8,6
Total	356.950	396.306	513.606	515.568	1.782.430	100,0

(a) Other 599.000 ha in 1991 has been retired thanks to a national set-aside program.

Source: AGRA EUROPE

Table 2 Application of the voluntary set-aside in Italy

Regions (*)	Set aside surface (hectares)				Share (%)
	1988-89	1989-90	1990-91	1991-92	
Piemonte	1.708	4.236	8.033	15.628	1,98
Valle d'Aosta	-	-	-	-	-
Lombardia	1.423	3.319	5.707	8.556	1,09
Trentino-Alto Adige	-	-	-	1.478	0,19
Veneto	838	1.240	2.323	4.391	0,56
Friuli-Venezia Giulia	671	1.604	2.738	4.790	0,61
Liguria	-	3	9	36	0,00
Emilia-Romagna	930	5.992	15.163	27.886	3,54
Toscana	22.113	56.335	90.674	141.113	17,90
Umbria	3.124	9.318	16.866	16.881	2,14
Marche	1.457	6.953	13.856	21.389	2,71
Lazio	4.374	13.700	24.949	37.095	4,70
Abruzzi	996	2.894	4.589	7.685	0,97
Molise	312	1.727	2.691	4.674	0,59
Campania	619	1.290	1.654	2.390	0,30
Puglia	8.746	36.848	73.957	76.089	9,65
Basilicata	14.735	46.585	81.231	100.035	12,69
Calabria	4.335	23.437	41.128	41.173	5,22
Sicilia	23.698	77.934	124.260	168.733	21,40
Sardegna	3.677	35.313	71.171	108.465	13,76
Total	93.756	328.728	580.999	788.487	100,00

(*) Cumulative surface

Source: EIMA and MIRAAF

Table 3 Application of the obligatory set-aside in Europe

Countries	Base area (thou. hectares)			rotational set aside (thou. hectares)		
	1993	1994	1995	1993	1994	1995
Belgium	479	479	479	18,9	19,6	14,1
Danmark	2.017	2.018	2.018	207,7	119,6	46,5
France	13.522	13.526	13.526	1.589,5	1.112,0	748,9
Germany	10.002	10.156	10.156	1.050,4	703,2	469,5
Greece	1.492	1.492	1.492	14,8	17,6	9,7
Ireland	345	346	346	25,8	22,9	19,0
Italy	5.800	5.801	5.801	195,3	209,6	182,6
Luxembourg	43	43	43	1,7	1,8	1,6
Portugal	1.054	1.054	1.054	61,2	59,5	44,0
Spain	9.229	9.220	9.220	875,5	993,8	418,8
The Netherlands	436	437	437	7,8	12,3	9,4
United Kingdom	4.407	4.461	4.461	567,5	533,5	337,3
Austria			1.203			57,9
Finland			1.591			153,0
Sweden			1.737			82,8

Source: European Commission

Table 4 Application of the obligatory set-aside in Italy

Regions	1993-94		1994-95 (*)	
	Surface (ha)	Share (%)	Surface (ha)	Share (%)
Piemonte	12.247	5,94	18.364	8,06
Valle d'Aosta	-	0,00	-	0,00
Lombardia	28.940	14,04	34.845	15,28
Trentino Alto Adige	2	0,00	1	0,00
Veneto	27.555	13,37	30.022	13,17
Friuli Venezia Giulia	18.372	8,92	11.882	5,21
Liguria	14	0,01	13	0,01
Emilia Romagna	18.914	9,18	23.421	10,27
Toscana	22.921	11,12	25.286	11,09
Umbria	11.968	5,81	15.633	6,86
Marche	12.229	5,93	10.381	4,55
Lazio	10.987	5,33	12.471	5,47
Abruzzo	2.098	1,02	2.772	1,22
Molise	5.033	2,44	5.534	2,43
Campania	2.154	1,05	2.687	1,18
Puglia	15.401	7,47	17.550	7,70
Basilicata	5.775	2,80	3.825	1,68
Calabria	2.812	1,36	4.096	1,80
Sicilia	6.661	3,23	6.730	2,95
Sardegna	1.969	0,96	2.461	1,08
Total	206.052	100,00	227.974	100,00

(*) Previsional data

Source: EIMA and MIRAAF

Table 5 Applications for the Reg. (EEC) 2080/92 in Italy

Regions	Applicants	Surface	Average surface	Budget	Requirement	Difference
	no.	hectares	hectares	1994/97 mill. Lit.	1994 (*) mill. Lit.	mill. Lit.
Piemonte	1.000	2.500	3	76.846	46.051	30.795
Valle d'Aosta	3	n.a.	n.a.	3.214	6	3.208
Lombardia	2.500	10.000	4	63.756	26.861	36.895
Trentino	-	-	-	-	-	-
Veneto	300	n.a.	n.a.	86.170	12.270	73.900
Friuli Venezia Giulia	22	42	2	37.252	242	37.010
Alto Adige	6	40	7	31.440	7.921	23.519
Liguria	n.a.	n.a.	n.a.	28.750	558	28.192
Emilia Romagna	n.a.	2.687	n.a.	36.000	54.569	-18.569
Toscana	1.000	n.a.	n.a.	116.236	88.490	27.746
Umbria	400	n.a.	n.a.	53.844	23.840	30.004
Marche	1.000	2.000	2	37.624	24.073	13.551
Lazio	600	1.446	2	15.392	35.584	-20.192
Abruzzo	583	6.510	11	37.956	73.945	-35.989
Molise	81	800	10	14.299	13.503	796
Campania	744	n.a.	n.a.	47.576	65.498	-17.922
Puglia	1.500	n.a.	n.a.	58.563	n.a.	58.563
Basilicata	700	n.a.	n.a.	42.080	181.574	-139.494
Calabria	700	2.500	4	53.797	n.a.	53.797
Sicilia	956	7.451	8	62.725	135.704	-72.979
Sardegna	370	11.603	31	106.676	91.163	15.513
Total	12.465	47.579	4	1.010.196	881.852	128.344

(*) Data available at 22.09.1994

Source: EIMA and MIRAAF

Table 6 Applications for the Reg. (EEC) 2078/92 in Emilia-Romagna

Measures	Applicants (number)	Surface (hectares)	Livestock (units)	Budget (ECU)
Obligation A "low-impact"	action A1 303	858 3.943,44	- -	4.992.997,00 1.122.027,98
Obligation B "extensivation"	action B1 392 action B2 17 action B3	3 2.692,66 43,49	- - -	5.631,60 385.055,80 7.074,50
Obligation C "livestock withdrawal"	action C1 3 action C2	4 - 3	- 242,52 33,99	48.948,20 6.188,20
Obligation D "environmental protection"	action D1 11 action D2 - action D4 313 action D5	333 204,86 - -	- - - 1.854,75	762.421,00 201.420,00 - 185.475,00
Obligation E "fallow soil recover"	action E1 100 action E2	58 931,77	- -	129.290,00 183.953,00
Obligation F "ecosystem protection"	action F1-F2-F3	64	-	824.828,00
Obligation G "outdoor recreation"	-	-	-	-
Total	2.459	28.930,58	2.131,26	8.855.310,28

Source: Regione Emilia-Romagna, Assessorato Agricoltura

Table 7 - Variable costs

VOICES	PRODUCTION COSTS		DIFFERENCE	
	EEC no. 1765/92	EEC no. 2078/92	(lit/ha)	(%)
	(lit/ha)	(lit/ha)		
RAW MATERIALS				
SEEDS:				
- Sugar beet	262.080	262.080	-	-
- Winter Wheat	138.000	138.000	-	-
- Corn	202.500	202.500	-	-
- Soybean	147.000	147.000	-	-
- Sunflowers	311.500	311.500	-	-
FERTILIZERS:				
- Sugar beet	291.150	146.513	-144.637	-49,7
- Winter Wheat	220.600	104.785	-115.815	-52,5
- Corn	401.450	204.055	-197.395	-49,2
- Soybean	154.170	0	-154.170	-100,0
- Sunflowers	88.240	88.240	-	-
PESTICIDES:				
- Sugar beet	597.907	326.682	-271.225	-45,4
- Winter Wheat	110.790	24.690	-86.100	-77,7
- Corn	136.646	136.646	0	0,0
- Soybean	95.850	82.950	-12.900	-13,5
- Sunflowers	122.450	122.450	-	-
MACHINERY:				
Fuel and lubricate consumption:				
- rotational schemes:				
Sugar beet	106.590	101.270	-5.320	-5,0
Winter Wheat	45.790	40.470	-5.320	-11,6
Corn	171.950	159.220	-12.730	-7,4
Soybean	88.730	83.790	-4.940	-5,6
- set aside area (10% UFSA):				
Sunflowers	89.870	89.870	-	-
Hired machinery combines:				
- harvesting:				
Winter Wheat	269.729	232.200	-37.529	-13,9
Corn	367.489	315.150	-52.339	-14,2
Soybean	364.162	261.000	-103.162	-28,3
Sunflowers	234.000	234.000	-	-
- grubbing and harvesting				
Sugar beet	320.000	320.000	-	-
FARM LABOR:				
- Sugar beet	461.659	407.978	-53.681	-11,6
- Winter Wheat	279.143	236.198	-42.945	-15,4
- Corn	536.813	504.604	-32.209	-6,0
- Soybean	322.088	268.406	-53.681	-16,7
- Sunflowers	316.719	316.719	-	-

Table 8 - Estimates of Farm Incomes

BUDGET VOICES	EEC 1765/92 overall values (lit)	EEC 2078/92 overall values (lit)	DIFFERENCE		EEC 1765/92 unit values (lit/ha)	EEC 2078/92 unit values (lit/ha)
			(lit)	(%)		
PRODUCTION VALUE	168.583.745	162.231.215	-6.352.530	-3,8	3.469.418	3.338.684
TRADING EXPENSES	57.086.898	46.794.381	-10.292.517	-18,0	1.174.836	963.019
QUOTAS	31.079.333	31.079.333	-	-	639.606	639.606
SALARIES AND SOCIAL SECURITY	20.102.841	17.851.779	-2.251.062	-11,2	413.712	367.386
WAGES	8.429.187	8.111.561	-317.627	-3,8	173.471	166.934
INTERESTS	12.080.712	11.759.182	-321.530	-2,7	248.619	242.002
TAXES	13.362.506	13.362.506	-	-	274.998	274.998
TOTAL COSTS, OF WHICH:	142.141.478	128.958.742	-13.182.736	-9,3	2.925.242	2.653.944
- VARIABLE COSTS	97.699.639	84.516.903	-13.182.736	-13,5	2.010.638	1.739.340
- FIXED COSTS	44.441.839	44.441.839	-	-	914.604	914.604
NET FARM PRODUCT PV - (TE + Q)	80.417.514	84.357.501	3.939.987	4,9	1.654.976	1.736.060
NET INCOMES:						
LAND OWNER	26.442.267	33.272.473	6.830.206	25,8	544.176	684.741
LAND OWNER (a)	38.522.980	45.031.656	6.508.676	16,9	792.795	926.742
LAND OWNER (b)	46.952.167	53.143.216	6.191.049	13,2	966.266	1.093.676
LAND OWNER (c)	67.055.008	70.994.995	3.939.987	5,9	1.379.978	1.461.062

(a) Land owner and capital investor

(b) Land owner, capital investor and farm manager

(c) Land owner, capital investor, farm manager and worker

Table 9 - Crop convenience thresholds

VOICES	SUGAR BEET		WINTER WHEAT		CORN		SOYBEAN	
	Regulation EEC no. 1765/92 (lit/hectare)	Regulation EEC no. 2078/92 (lit/hectare)	Regulation EEC no. 1765/92 (lit/hectare)	Regulation EEC no. 2078/92 (lit/hectare)	Regulation EEC no. 1765/92 (lit/hectare)	Regulation EEC no. 2078/92 (lit/hectare)	Regulation EEC no. 1765/92 (lit/hectare)	Regulation EEC no. 2078/92 (lit/hectare)
VARIABLE COSTS	2.039.385	1.564.522	1.064.052	776.343	1.816.848	1.522.175	1.171.999	843.146
PROPORTIONAL COSTS								
- interests	78.734	68.119	53.649	48.039	74.826	68.697	55.438	48.635
- wages (*)	145.351	115.995	117.301	100.980	211.585	181.450	80.925	58.000
- consultancy	50.000	129.653	50.000	129.653	50.000	129.653	50.000	129.653
FIXED COSTS								
- quotas	639.606	639.606	639.606	639.606	639.606	639.606	639.606	639.606
- taxes	274.998	274.998	274.998	274.998	274.998	274.998	274.998	274.998
OVERALL COSTS	3.228.074	2.792.893	2.199.605	1.969.618	3.067.862	2.816.578	2.272.966	1.994.038
EEC INCENTIVES	0	476.600	706.300	1.016.090	1.225.578	1.535.368	1.729.117	2.038.907
SET ASIDE AREA:								
Overall costs	182.261	182.261	182.261	182.261	182.261	182.261	182.261	182.261
EEC Incentives	80.857	80.857	80.857	80.857	80.857	80.857	80.857	80.857
CONVENIENCE THRESHOLD	3.329.477	2.417.697	1.594.710	1.054.933	1.943.688	1.382.614	645.253	56.535
DIFFERENCE EEC no. 1765/2078		911.781		539.777		561.074		588.718