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CO-RESPONSIBILITY AND THE EUROPEAN
COMMUNITY'S GRAIN SECTOR

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OUTLINE

Co-Responsibility And The European Community's Grain Sector

I. Introduction [6]

The European Community (EC) was founded in 1957 by the Treaty of Rome. The original member countries were Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany. The motivation of the original six members in forming the Community were both political and economic. It was hoped that closer cooperation would reduce the likelihood of a recurrence of the major military conflicts that had devastated Europe in the past. Also the prospect of a large affluent market, free of impediments to internal trade and with a strong preference for goods produced within the Community, provided a most attractive economic inducement. In 1973 a northern expansion of the EC took place, when Denmark, Ireland, and the United Kingdom joined the Community of six. In the 1980's a second enlargement of the EC took place, when three southern European countries joined the EC. They were Greece in 1981, and Portugal and Spain in 1986.

Improved productivity, fair living standards for farmers and farmworkers, stable markets and secure supplies at reasonable prices for the consumer: these are the objectives set forth in 1957 for European agriculture.

Since 1962, the common organization of the market in grains is one of the central elements of the Common Agricultural Policy (CAP) of the European Community. Traditionally the CAP has relied on the following three principles:

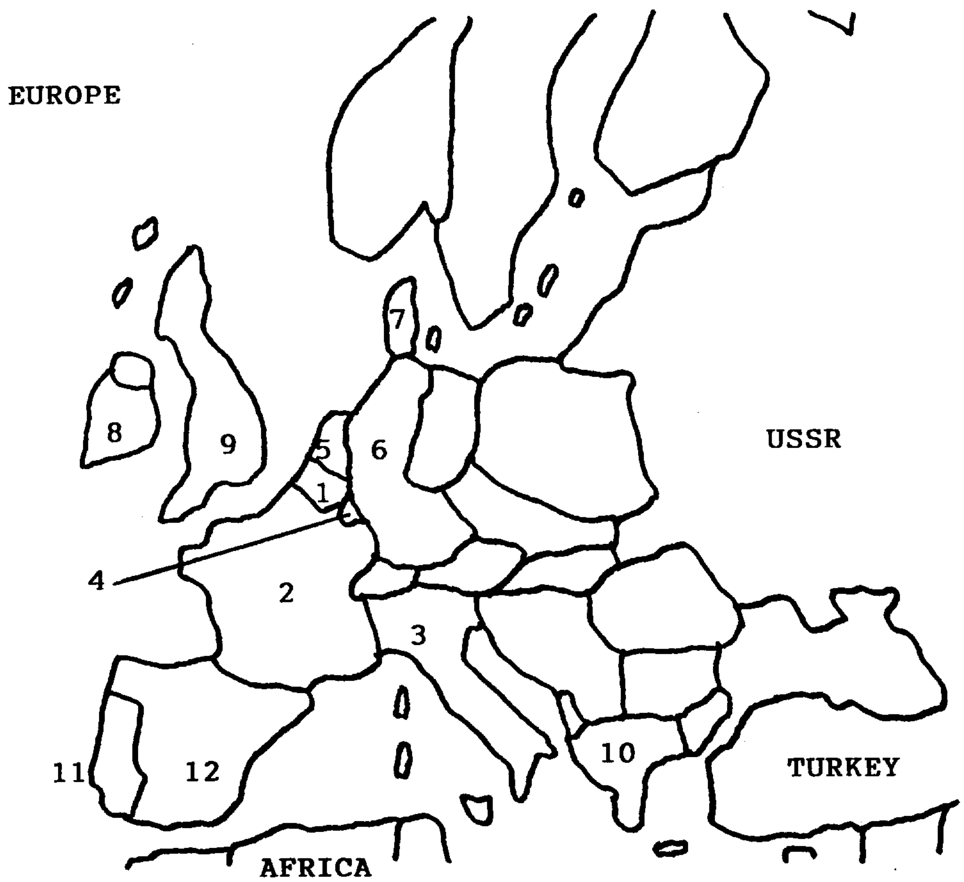
(1) a common market for agricultural products, which attempts to set a single level of price support for each commodity throughout the EC;

(2) Community preference, which ensures that EC products have a competitive advantage over imported products; and,

(3) financial solidarity, which requires the EC to fund all CAP activities jointly.

The high domestic prices provided by the CAP stimulated grain production, reduced growth in consumption, and led to the accumulation of large stocks. As a result, EC grain imports fell sharply and large

The Member Countries Of The European Community



Original Member States	1. Belgium
	2. France
	3. Italy
	4. Luxembourg
	5. Netherlands
	6. West Germany
Enlargement 1973	7. Denmark
	8. Ireland
	9. United Kingdom
2nd Enlargement	10. Greece
	11. Portugal
	12. Spain

export subsidies were required to dispose of the ever increasing surplus production.

As a solution to the budgetary dilemma created by the common organization of the market in grains, the Council of Ministers introduced in 1986 a fourth principle into the CAP, namely the producer co-responsibility levy, as a response designed to control the cost of grain surplus. The levy is meant "to make producers face the realities of the market". It also seeks to regain from farmers some of the price support they receive for their grains.

This paper will discuss the reasons for introducing the levy. In addition, it will reveal the social welfare implications the levy has brought along in its path.

II. The Common Agricultural Policy (CAP)

A. Nature of the CAP [2,4,5,8,15]

The CAP, as it has evolved, represents probably the most comprehensive example of the management of agricultural markets in the Western World. It reflects a fundamental lack of confidence in unconstrained market forces to achieve the kinds of objectives that EC members would like to see. The objectives have been spelt out in detail in the Treaty of Rome (Article 39) and include the promotion of improved agricultural incomes and of technical and economic efficiency, the stabilization of markets, and guaranteed regular supplies to consumers at reasonable prices. The choice of a bureaucratic management approach to agricultural policy reflects both the established history of agricultural protectionism in Western Europe and the state of agriculture in the member countries at the time the CAP was being developed.

Policy on markets and prices: the main mechanism

Once the objectives and principles of the policy had been agreed, the market organizations were set up. In the early days, the organizations covered just over half the farm output of the Six. By 1970, the proportion was 87% and, by 1986, 91%.

One of the first market organizations to be introduced was that of grains, in 1962. It was regarded from the beginning as a model. It has been adjusted in many respects, but for the purpose of an illustration, I will confine myself to a basic outline to explain the principal mechanism.

Target and intervention prices

The target price is the cornerstone of the market organization. It is set at the beginning of each marketing year as being the farmgate price farmers should receive in consumption areas. If internal supply exceeds demand, the market price, i.e. the price received by farmers, generally falls below the target price. If it falls below a certain limit, the Community intervenes to stabilize the market by offering to buy the grains at a price fixed in advance: the intervention price. This is the price at which the authorities buy in grains without limit as to quantity through agencies set up for that purpose. During 1984/85, the

Community bought in nearly 9 million tons of common wheat in this way, which it later sold. In accordance with the principles of joint financial responsibility, the cost of this operation was borne by the Community.

The intervention price is well below the target price. It forms a lower limit for internal prices and represents a kind of guaranteed minimum price for Community farmers. It is one of the cornerstones of the system.

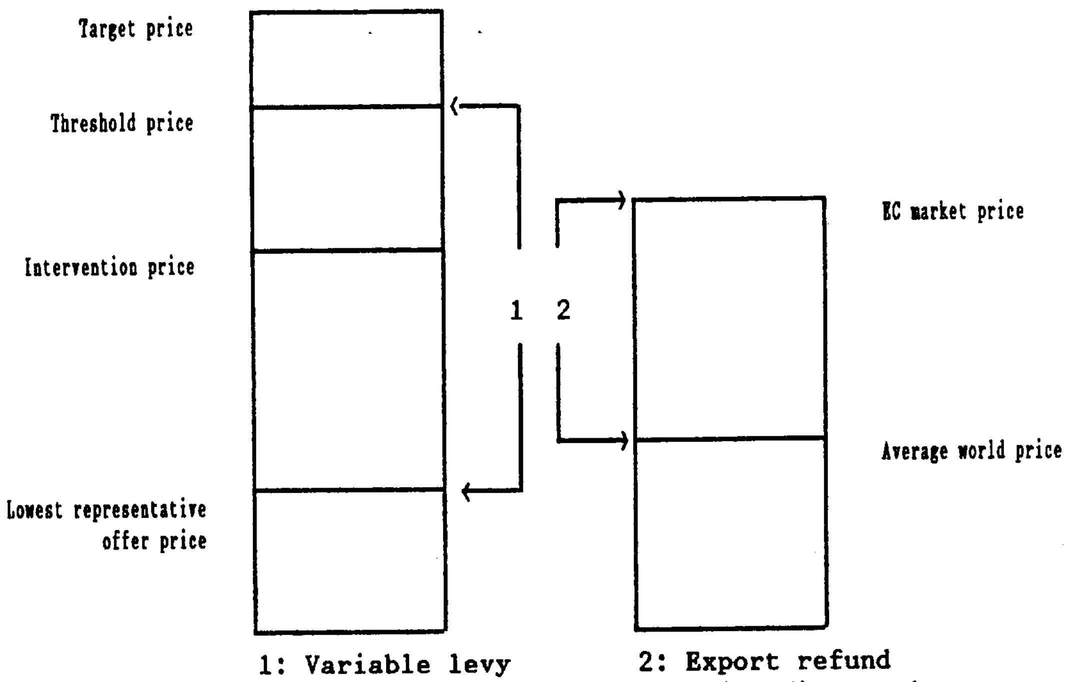
Threshold price, levies and refunds: a sluice-gate system at the frontiers

Community prices for common wheat are generally well above the prices charged by the other main wheat producers (United States of America, Canada, and Australia). In order to prevent the Community market from being flooded from outside, which would result in the complete collapse of European production, and to enable Community producers to participate in world trade, regulatory measures have to be taken at the boundaries of the Community. A threshold price is set for imports on which the lowest import price (world market price + transport to Community frontier) is aligned. The threshold prices are calculated so that the prices of the imported grains at the major consumption centers of the Community, including transport and unloading costs, roughly correspond to the target prices. The difference between the threshold price and the import offer price is charged as a 'levy' and accrues to the Community budget as a contribution to the Community's own financial resources. Conversely, for exports, Community exporters are 'refunded' the differences between the market price in the Community (including transport costs to the Community's port of export) and the sale price that can be obtained on the world market. The refunds are chargeable to the agricultural part of the budget of the Community.

A flexible system

The sluice-gate system formed by the import levies and export refunds is the second cornerstone of the market organization. Its big advantage is its considerable flexibility as a market stabilization instrument. This can be illustrated by the following example: Let us assume that the market price for one ton of wheat in the Community is

Figure 1: Basic mechanism of many EC agricultural support systems



Source: Australian Government Publishing Service. Bureau of Agricultural Economics. Policy monograph no. 2. Agricultural policies in the European Community. Their origins, nature and effects on production and trade. Canberra, 1985. p. 33.

between the target price (100) and the lower intervention price (70) at 80. The import price is 60 and the threshold price 95. The import price is increased to the threshold price by the levy (95-60=35). The addition of transport costs to the main consumption centers of the Community brings the price of the wheat there roughly up to the target price (100). Since wheat produced in the Community is offered here at the domestic market price (80), Community production enjoys a clear advantage - a Community preference of 100 - 80 = 20.

B. The CAP from the 1960's to the present [1,7,10,21]

Developments in the EC Grain Sector

In less than 20 years, the EC has evolved from one of the world's largest grain importers into one of its largest exporters. This change occurred under the umbrella of a policy system that provided EC grain farmers with prices well above world market levels and protected them from lower priced imports. The high domestic prices provided by the Common Agricultural Policy (CAP) stimulated grain production, reduced growth in consumption, encouraged the use of substitute feeds, and led to the accumulation of large stocks. As a result, EC grain imports fell sharply and large export subsidies were required to dispose of the surpluses on world markets.

EC grain production has increased steadily over the last 15 years as the Community enlarged from 9 members in the 1970's to 10 in 1981 and then to 12 in 1986. Between 1973/74 and 1980/81, grain production in the EC-9 grew at an annual rate of around 2%, increasing from 105.8 million tons to 119.6 million tons (see table 1, p.18).

The accession of Greece in 1981 added about 5 million tons of annual grain production. Production accelerated between 1981/82 and 1985/86, growing at an annual rate of 4%. In January 1986, Spain and Portugal joined the EC, bringing an additional 17 million tons of grain production into the Community, accounting for 11% of total EC-12 production in 1986/87. Grain supplies grew 3% per year between 1986/87 and 1988/89, reaching 163.4 million tons in 1988/89.

Although grain area in the EC has generally been trending downward, its impact on production has been more than offset by substantial improvements in yields. Average grain yields in the EC increased from 3.97 tons per hectare in 1973/74 to 4.46 tons by 1980/81, an increase of 2% per year. Although EC average yields declined slightly in 1981/82, due mainly to the addition of Greece, they continued to increase steadily between 1981/82 and 1985/86, climbing from 4.34 tons per hectare to 5.11 tons.

Because of substantially lower yields in Spain and Portugal, average EC yields dropped to 4.33 tons per hectare in 1986/87, but they still continued to climb upward, reaching 4.70 tons per hectare in 1988/89. Since 1973/74, the growth in grain yields has averaged nearly 3% a year. The dramatic growth was the result of a combination of factors including high grain support prices, the adoption of higher yielding varieties, more intensive fertilizer application, increased mechanization, and improved management practices.

In contrast to the rapid expansion in grain production, EC consumption of grain has been relatively stable. Between 1973/74 and 1985/86, consumption fluctuated in the range of 112-120 million tons.

With the accession of Spain and Portugal in 1986, consumption increased by 18 million tons, but this was just 3 million tons more than the corresponding increase in production, resulting in only a small decline in self-sufficiency. Human consumption has remained fairly stagnant, reflecting high prices, low population growth in most EC countries, and the limited response of food consumption to increases in income. Despite the steady increase in the consumption of animal feeds over the last 15 years, feed use of grains has remained fairly constant due to high prices for feed grains, increased use of both imported and domestically produced oilseeds and non-grain feeds, reduced EC dairy herds, and improved feed utilization in animal production.

Agricultural markets

Grains:

The 1988/89 marketing year was characterized by the changed world market situation and its repercussions on the Community market, as well as by the introduction of stabilizers. The drought in the USA and the period of high consumption which followed led to a decrease in stocks and an increase in prices which reduced the level of export refunds by almost half. World production was 1,232 million tons in 1988/89. Estimates for 1989/90 put it at 1,344 million tons.

During the last two years, world consumption of wheat has been higher than production. EC exports reached the record level of almost 35 million tons in 1988/89, made up of 17.3 million tons of common wheat, 11.2 million tons of barley and 3.6 million tons of durum wheat. In 1988/89, corn exports jumped to 1.8 million tons because of increased self-sufficiency in the Community and because of the EC-USA agreement on annual imports of 2.3 million tons of corn and sorghum for the period 1987-90 (in the context of Spanish accession). Furthermore, the consumption of corn in animal feed has fallen somewhat owing to increased wheat consumption.

In 1988/89, grain imports were about 5 million tons, including Spanish imports from the USA. Imports have been relatively stable during recent years and represent mainly, with the exception of Spanish imports, imports of specific qualities not available in the Community and Portuguese imports under the current national market organization.

In the 1988/89 marketing year, the quantity of common wheat available for export will be substantial as a result of increased production. On the other hand, exports of other grains, in particular barley and corn, are expected to be substantially less, as a result of lower production and increased on-farm consumption due to the lack of fodder in certain regions of the Community.

In 1989/90, global consumption of wheat in the world is again expected to exceed production, resulting in a further, although limited, reduction of stocks. However, the grain area has been increased substantially in the main exporting countries and, under normal climatic circumstances, world production should be able to match demand and even make it possible to rebuild stocks in coming years.

On the Community market, the 1988 harvest (163.8 million tons) was slightly below the long-term average but was a clear improvement over the average for the last three years. The area of 34.9 million hectares remained at a relatively high level, being only 2.1 million ha short of the record for the decade (1980). The reduced area is due in particular to a reduction in the area sown to barley, oats and rye while the area under corn and durum wheat has increased steadily. Yields were above normal and the average yield was only slightly below (2%) the 1984 record.

The 1989 harvest (160.5 million tons) was much below the long-term trend but still above the three-year average. The main reason for the relatively low production was the warm and very dry summer throughout the Community. Nevertheless, production was higher than initially expected, and quality was in general very good. For the first time in five years, the grains area increased slightly (+1%), due solely to a 4% increase in the wheat area, while the area under barley and other grains continued to decrease. Yields were on average relatively good and only 4.5% lower than the record level of 1984. However, there were substantial regional variations (ranging from record to very poor yields). The long-term trend in production depends a lot on the crop area. This year saw an increase in the area sown to high-yielding grains (common wheat and corn) in particular, due to conversion from oilseed and protein crops, and if this tendency were to be confirmed production could increase substantially in the coming years, because yields are progressing at more than 2% a year. However, stabilizers and set-aside measures could keep production within the relatively low levels registered over the last few years.

Consumption has decreased steadily during the last five years, due to decreased animal consumption and was at its lowest in 1987/88. In 1988/89, animal consumption increased only slightly to 82.2 million tons due to higher world market prices for grain substitutes, especially soya cake. A figure of 80.6 million tons is forecast for 1989/90; in the longer term, the downward trend in animal consumption of grains is expected to continue as a result of increased oilseed and protein crop production in the Community and the current import arrangements for grain substitutes and feed protein.

During the 1988/89 marketing year, producer prices were relatively stable around the buying-in price in the main surplus regions while keeping well above it in deficit regions, in particular Italy (common wheat). However, market prices were relatively high as a result of the active export program.

C. The agricultural budget [7,13]

The EAGGF: European Agricultural Guidance and Guarantee Fund

The financial instrument available to the Community for implementing its common agricultural policy is the EAGGF. This fund consists of two sections:

- the Guarantee Section, which finances measures relating to the common organization of markets;
- the Guidance Section, which finances measures to improve the production, processing and marketing structures for agricultural products.

Over the past five years the funds available to the Guidance Section have totalled 4,500 million ECU. This money is used to subsidize investment projects (usually at the rate of 25%, but higher rates apply to less-favored areas, particularly in the south of the Community), and to finance part of the cost general structural measures, regional measures, and measures to restore the balance on certain markets. The budget of the Guarantee Section, on the other hand, covers all expenditure on market management (production and consumption, aids, export refunds, storage costs).

Over 90% of agricultural production in the European Community is covered by the common organization of markets. Under the market organization, farmers enjoy price and sales guarantees for some 70% of

Table 1: EAGGF guarantee expenditure, by product

Product	1980 Mio ECU	1981 Mio ECU	1982 Mio ECU	1983 Mio ECU	1984 Mio ECU	1985 Mio ECU
Grains	1669.3	1921.4	1824.5	2441.2	1650.0	2310.2
Refunds (food aid incl.)	1174.7	1206.3	1064.9	1525.0	918.3	1076.7
Intervention, of which:	494.6	715.1	759.6	916.2	731.7	1233.5
- production refund	148.1	129.2	135.4	129.7	175.5	180.8
- aid for durum wheat	129.0	171.2	165.8	218.5	200.3	242.5
- storage	212.8	341.7	453.4	565.6	355.8	810.1
- co-responsibility levy	-	-	-	-	-	-
- small producer aid	-	-	-	-	-	-
Rice	58.7	21.7	50.3	92.9	47.8	50.1
Sugar	575.2	767.5	1241.9	1316.2	1631.5	1804.5
Olive oil	317.9	442.7	493.1	675.3	1096.4	692.2
Oils and fats	369.4	582.7	720.7	945.6	655.6	1110.6
Protein crops	60.5	65.5	82.8	142.3	215.6	372.5
Textile plants and silkworms	17.2	72.3	116.4	160.0	108.0	240.6
Fruit & vegetables	687.3	641.1	914.3	1196.1	1454.6	1230.7
Wine	299.5	459.4	570.6	659.2	1222.6	921.4
Tobacco	309.3	361.8	622.6	671.3	776.4	862.9
Other sectors	38.2	46.7	53.4	55.6	51.5	54.6
Milk products	4752.0	3342.7	3327.7	4396.1	5441.7	5933.2
Beef/veal	1363.3	1436.9	1158.6	1736.5	2546.8	2745.8
Sheepmeat and goatmeat	53.5	191.5	251.7	305.6	433.5	502.4
Pigmeat	115.6	154.6	111.6	145.0	195.9	165.4
Eggs and poultrymeat	85.5	83.9	103.9	123.3	69.8	63.2
Non-annex II products	221.3	282.4	414.4	343.2	382.4	440.8
Fishery products	23.0	28.0	34.0	25.7	15.6	16.1
Total market organization	11016.7	10902.8	12092.5	15431.1	17995.7	19517.2
(ACAs) in intra-Community trade	-	0.1	0.4	0.3	0.3	0.2
Monetary compensatory amounts (MCAs)	298.5	238.3	312.7	488.3	375.9	189.6
Total+ACAs+MCAs	11315.2	11141.2	12405.6	15919.7	18371.9	19707.0
Community comp. meas.	-	-	-	-	-	136.4
Grand total	11315.2	11141.2	12405.6	15919.7	18371.9	19843.4

Source:
EC Commission, Directorate-General for Agriculture (various issues of The Agricultural Situation in the Community).

Table 1: EAGGF guarantee expenditure, by product (con't)

	1986 (1)		1987 (1,6)		1988 (1,7)		1989 (2)		1990 (3)	
Product	Mio ECU	%	Mio ECU	%	Mio ECU	%	Mio ECU	%	Mio ECU	%
Grains	3391.2	15.3	4223.8	18.4	4422.8	15.9	4133	14.6	4505	15.8
Refunds (food aid incl.)	1711.7	7.7	3156.8	13.7	3083.0	11.1	2773	9.8	2961	10.4
Intervention, of which:	1679.5	7.6	1067.1	4.7	1339.8	4.8	1360	4.8	1544	5.4
- production refund	177.7	0.8	235.5	1.0	393.3	1.4	342	1.2	369	1.3
- aid for durum wheat	210.8	0.9	256.2	1.1	275.1	1.0	348	1.2	437	1.5
- storage	1347.4	6.1	937.2	4.1	1274.7	4.5	1358	4.8	1808	6.4
- co-responsibility levy	(56.4)	(0.2)	(378.7)	(1.6)	(677.5)	(2.4)	(906)	(3.2)	(1280)	(4.5)
- small producer aid	-	-	16.9	p.m.	40.8	0.1	122	0.4	103	0.4
Rice	93.7	0.4	103.0	0.4	88.7	0.3	121	0.4	106	0.4
Sugar	1725.5	7.8	2035.6	8.8	2081.8	7.5	2051	7.2	2127	7.5
Olive oil	604.3	2.7	1139.2	4.9	945.0	3.4	1765	6.2	1592	5.6
Oils and fats	2027.5	9.1	2687.4	11.7	2971.8	10.7	2944	10.4	3422	12.1
Protein crops	460.0	2.1	587.2	2.6	689.3	2.4	706	2.4	703	2.5
Textile plants and silkworms	565.0	2.5	306.4	1.3	454.2	1.6	646	2.3	660	2.3
Fruit & vegetables	986.0	4.4	967.1	4.2	708.2	2.5	1221	4.3	1307	4.6
Wine	630.8	2.8	800.3	3.5	1545.5	5.5	1466	5.2	1389	4.9
Tobacco	782.2	3.5	803.6	3.5	966.1	3.5	975	3.5	1055	3.7
Other sectors	56.4	0.3	44.5	0.2	59.8	0.2	77	0.3	81	0.3
Milk products	5405.8	24.4	5182.3	22.6	5983.6	21.6	4908	17.4	4489	15.8
Beef/veal	3481.7	15.7	2148.7	9.3	2475.8	8.9	2589	9.2	2187	7.7
Sheepmeat and goatmeat	616.9	2.8	573.8	2.5	1293.6	4.7	1454	5.2	1358	4.8
Pigmeat	151.8	0.7	158.6	0.7	215.6	0.8	237	0.8	185	0.7
Eggs and poultrymeat	97.8	0.5	152.0	0.7	194.1	0.7	221	0.8	213	0.8
Non-annex II products	502.9	2.3	590.2	2.6	602.4	2.2	624	2.2	693	2.4
Fishery products	18.0	0.1	17.4	0.1	46.9	0.2	37.3	0.1	32	0.1
Total market organization	21597.5	97.3	22521.1	98.1	25745.3	92.9	26175.3	92.7	26104	92.0
(ACAs) in intra-Community trade	5.8	-	18.0	0.1	64.3	0.2	45	0.1	35	0.1
Monetary compensatory amounts (MCAs)	475.9	2.1	636.9	2.7	505.2	1.9	370	1.3	136	0.5
Total+ACAs+MCAs	22079.2	99.5	23176.0	100.9	26314.8	95.0	26590.3	94.1	26275	92.6
Other	113.5	0.5	(208.0)	(0.9)	132.5	0.5	188	0.7	345	1.2
Rural dev. (chapter 100)	-	-	-	-	-	-	-	-	200	0.7
Set-aside arable land[8]	-	-	-	-	-	-	20	0.1	70	0.3
Depr. & disp. of stocks	-	-	-	-	1240	4.3	1449	5.1	1470	5.2
Grand total	22192.7[9]	100	22968.0[4]	100	27687.3[5]	100	28247.3	100	28360	100

Source: EC Commission, Directorate-General for Agriculture. (1) The Expenditure items are taken from the returns made by the Member States under the advance payments system and are charged to a given financial year under Art. 97 of the Financial Regulations. (2) Budget adopted on 15.12.1988 (OJ L 26, 30.1.1989). (3) 1990 preliminary draft budget. (4) Including ECU - 208.2 million from clearance of the 1983, 1984 and 1985 accounts. (5) Including ECU - +29.2 million outstanding from the clearance of the 1985 and earlier accounts. (6) 1987 expenditure includes payments to beneficiaries between 1 January and 31 October 1987. (7) 1988 expenditure includes payments to beneficiaries between 1.11.1987 and 15.10.1988. (8) Amounts credited to the "Guarantee" Section, i.e. 50% of the amount entered in chapter 39 of the budget. (9) Not including ECU - 55.3 million from clearance of the 1982 accounts bringing the total to 22137.4 million ECU.

their products. Agricultural expenditure accounts for 70% of all expenditure under the Community budget.

Expenditure and revenue

The table below shows changes in EAGGF expenditure and net expenditure under the CAP (after deduction of levies).

Table 2: Agricultural expenditure

(million ECU)

	1985	1986	1987	1988 (1)	1989 (2)	1990 (3)
EAGGF-Guarantee Section (4)	19744.2	22137.4	22967.7	27687.3	28247.3	28360.0 (6)
EAGGF-Guidance Section (payments)	719.6	773.5	908.7	1179.5	1434.0 (7)	1751.5 (7)
Total gross expenditure	20463.8	22910.9	23876.4	28866.8	29681.3	30111.5
Levies	1121.7	1175.5	1626.1	1504.6	1419.2	1152.4
Sugar levies	1057.4	1111.5	1471.8	1390.7	1316.9	1384.6
Total net expenditure (5)	18284.7	20623.9	20778.5	25971.5	26945.2	27574.5

Source: Commission of the European Communities. The Agricultural Situation in the Community. 1989 Report. Brussels, Belgium.

NB: 1985: EUR 10. From 1986: EUR 12. (1) Including ECU 1,240 million for the depreciation of stocks (Chapter 81). (2) 1989 budget appropriations and supplementary and amending budget No 1/89, including the set-aside of arable land (50% of Item 3900: ECU 20 million), common organization of the markets in the fisheries sector (Chapter 40: ECU 37.3 million), the depreciation of stocks and the disposal of butter (Chapter 81: ECU 1449 million). (3) 1990 preliminary draft budget also including the set-aside of farmland (50% of Article 390: ECU 70 million), the Fisheries Guarantee Fund (Chapter 40: ECU 32 million) and the repayment to the Member States of expenditure for the depreciation of stocks and for specific measures for the disposal of butter (Chapter 81: ECU 1,470 million). (4) Including adjustments resulting from the clearance of accounts. (5) Various aspects of commercial policy, not directly linked to the CAP, also have financial consequences which are not shown separately from those directly linked to the CAP. (6) Including ECU 200 million in Chapter 100 for rural development schemes linked to market operation.

(7) Including fisheries and set-aside chargeable to EAGGF Guidance Section.

Gross EAGGF expenditure as a percentage of total expenditure, before the deduction of the revenue from levies, fell from 72.5% in 1985 (of which 70% for the Guarantee Section) to 70.2% (67.3%) in 1988 and 66.2% (63%) in 1989, based on the budget and supplementary budget No 1/89. In 1990 the figures should be 64.2% and 60.5% (55.1% after deduction of the receipts from import levies and sugar levies).

III. The Producer Co-Responsibility Levy

In 1985/86 it was generally accepted that policy reform in the grain sector was now essential. The fundamental choice facing policy-makers was one of reducing intervention prices or curtailing production through physical controls. There is a common presumption that the reduction in farm incomes which a 'realistic' price cut would produce is too great to be politically viable. ('Realistic' means sufficient to remove most of the gap between EC and trend world prices, thus making any EC exports competitive in the international market). As a result, and in light of the 'success' achieved in the milk sector, there has been increased interest recently in controlling grain production through quotas or set-aside, and in the extended use of co-responsibility levies.

The following sections of this chapter will present the rules and regulations laid down by the agricultural ministers.

A. Regulations for the 1986/87 marketing year [18]

The agricultural ministers' resolution of April 26, 1986, introduced as from July 1, 1986, the producer co-responsibility levy of 3% for grain. The Council followed the Commissioners' recommendation on the whole but not in one important aspect. The Commissioners proposed that the levy should be collected and later remitted by the first buyer of the grain whereas the Council decreed that this should be done when the grain is processed, exported, or sold to the intervention agencies.

One doubts whether the ministers realized at the time the full extend of what they inflicted on the public. This shifting of the levy away from the first buyer of grain has created a multitude of practical, organizational, and legal problems which were still unresolved, weeks and months after the start of the marketing year 1986/87. It is to be hoped that they recognize their deviation and that they will return to the Commission's initial plans in the upcoming marketing year 1987/88.

Reg. 1579/86 amending art. 4 of reg. 2727/75 introduces into the Grain Market Regulation the grain producer co-responsibility levy which is, as its name implies, to be borne by the producers. The levy is planned to last from 1986/87 until 1990/91.

The levy is set at 5.38 ECU/ton in 1986/87 (art. 1 price reg. 1584/86) which is 3% of the intervention price of bread wheat. The original calculation of the levy was based on the grain consumption in the Community, the size of the crop, imports of grain substitutes (appendix D of the basic reg. 2727/75), exports and the cost of subsidizing them, and finally the starch production subsidy, all of which added up to 5.7% of the intervention price of wheat which the Commission considered for political reasons as being too high, and they recommended 3% instead.

The co-responsibility levy must be realistically seen as a new source of revenue. It is meant "to make producers face the realities of the market", though it is debatable whether it really needed the very complicated and therefore costly device of the co-responsibility levy to achieve that aim. The major details of the co-responsibility levy are contained in the Commission's regulations listed below. Their conversion into the individual countries' internal law required a multitude of national publications and directives to the authorities concerned with their implementation.

Regs. 2040/86 of June 30 and 2572/86 of August 12, 1986,
contain the directives for the implementation of the levy,
regs. 1871/86 of June 17 and 2366/86 of July 28, 1986,
contain details of the exemptions from the levy,
regs. 1983/86 of June 24 and 2096/86 of July 3, 1986,
contain details of the refund of the levy to small producers.

The following is a summary of the directives contained therein: The co-responsibility levy of 5.38 ECU/ton applies to all kinds of grain (except rice) harvested in the Community in 1986. It is in the first instance to run for five years until 1990/91 and to be revised each year, with the recalculation to be based on the above criteria.
It is being levied on grain which

- undergoes its first processing stage after July 1, 1986,
- is taken over by an intervention agency,
- is being exported in its original state (as kernels) to non-Community countries or to Portugal.

The definition of the "first processing stage" has caused a lot of confusion. In general, it means that the resulting product comes no longer under the heading of chapter 10 of the communal customs tariff which covers all kinds of basic grains including corn cob mix and silage corn (with corn cob mix for silage being exempt from the levy, though not corn silage). The levy has to be paid on chicken feed where the grains remain in their original state and are mixed with other components. According to reg. 2040/86, the levy is also due in the case of contract processing of the grain as a service for and on behalf of the farmer, be it on the farm or elsewhere. The levy is to be remitted by the processors (millers, maltsters, compounders, starch producers and the like) on the quantity processed, which need not to be the same as the purchased quantity. The settlement between the farmer and his buyer is based on the standard quality, i.e. the levy is not payable on excess moisture or impurities.

The levy must be a separate item in each of the invoices passing from the seller to intermediate and from him/her to the processor as the final buyer. The processors have to send their report by the 15th day of the month following the month of processing to the designated authorities, in Germany the customs head office, in France and the U.K. the intervention agencies, in the Netherlands the Productschap, in Greece the ministry of agriculture etc., and to remit the levies by the end of that month.

The levy must also appear separately in the settlement with the farmers so that they may later substantiate their claim of a refund.

Because of the fact that the processor has to collect and remit the levies and not the farmer, value-added tax was in Germany initially calculated on the price minus the levy, similar to the procedure in France and the U.K. whereas Belgium and the Netherlands always based v.a.t. on the gross price (before deduction of the levy). German farmer suffered thus an additional loss of 1.68 DM/ton ($1.00/ton) because of their high v.a.t. rate of 13%. The German ministry of finance decided not before September 19, 1986, to change retrospectively to the procedure practiced in the Benelux countries (Belgium, the Netherlands, Luxembourg), which means that every invoice and other document passed since July 1, 1986, will have to be corrected.

Prices quoted on the exchanges are of course without the levy (and as before, without the v.a.t.). If grain is sold to the intervention agencies, the intervention price is reduced by the levy of 5.38 ECU/ton. If the agencies sell for export or for the home market, they do so at the full price without deducting the levy because it was already collected and remitted after being purchased.

If, however, open market grain is exported, the exporter has to pay the co-responsibility levy. It is not being offset against the export restitution. The levy must be submitted together with the customs declaration and payment of it becomes due when the export formalities are being complied with.

The major exemptions from the co-responsibility levy are:

a) grain imported from non-Community countries or from Portugal. Proof that the processed goods are made from the previously imported grain (as temporarily demanded, see art. 4 reg. 2040/86) is no longer necessary. A customs entry confirmation is sufficient for an exemption certificate to be issued.

b) Grain processed on the farm is exempt provided the processing machinery belongs temporarily (is rented) or permanently to the farmer and the products are consumed on the farm.

c) Extra grain needed and purchased by the farmer, be it from another farmer or from a merchant, is exempt.

d) Grain stocks owned on June 30, 1986, by traders, processors or intervention agencies, in store with them and registered by July 7, 1986, at the latest, as being in their possession are also exempt (reg. 1871/86).

Originally, the Commissioners planned to exempt for social reasons small producers of grain selling up to 25 tons p.a. which is, however, only the case in Italy and Spain. In the other Community countries, small producers are not exempted, but the will be compensated at the end of the marketing period, possibly in the spring of 1987. Available for that purpose are 69.99 million ECU in the remaining nine countries including 15.19 million ECU or 36 million DM for German farmers according to the Commissioners' distribution ratio (reg. 2096/86). The conversion is based on the green rates at the start of the marketing year.

The subsidy for small producers may not exceed the equivalent of the co-responsibility levy on 25 tons which is at a maximum of 134.50 ECU per farm. To determine who is or not a small producer (the criterium may be the arable land or else the grain acreage) is a national matter, but neither the German nor the European governments have so far indicated how they are likely to proceed.

B. Regulations for the 1987/88 marketing year [19]

The co-responsibility levy of 5.38 ECU/ton introduced in 1986/87 has been maintained (reg. 1902/87), but in the session of July 1, 1987, the Council of Ministers authorized the member countries to collect the levy at the first marketing stage (from the producer, as in Italy during the past marketing year on the basis of a regulation to that effect). The first marketing stage is, according to regulation 2529/87, also the export of grain by a producer or the processing of grain on the farm provided it is then being sold to another farmer.

France had been making use of this authorization since September 1, 1987. In intra-Community trade, the delivery form T2 must be endorsed accordingly so that the different levy procedures (in France and Italy at the first marketing stage, in the other EC countries either at the first processing stage or when the grain is exported or tendered to the intervention agencies) do not give one country an unfair advantage over the other.

Small producers are still exempted from the levy. They include in Germany, for example, farmers who grow grain on less than 15 hectares (37 acres) or sell no more than 25 tons of grain. The levy they pay is later refunded to them with the maximum refund amounting to DM 322.50 (134.50 ECU) per farm.

C. Regulations for the 1988/89 marketing year [9,17]

The major details of the co-responsibility levy (CLR) are contained in the Commission's regulations listed below. Their conversion into the individual countries' internal law required a multitude of national publications and directives to the authorities concerned with their implementation.

Reg. 1432/88 (directives for the implementation of the levy)
Reg. 2227/88 (details of the refund of the levy to small

producers)
Reg. 2324/88 (further directives)
Reg. 2388/88 (details of the additional CRL)
Reg. 2389/88 (subsidy for small producers)

The major directives are in short:

The CRL of 5.38 ECU/ton applies to all kinds of grain (except rice) grown in the Community; during its first two years, 1986/87 and 1987/88, the CRL was to be paid on grain which, after July 1, 1986,

- underwent its first processing stage,
- was taken over by an intervention agency,or
- was exported in its original state (as kernels) to non-Community countries or to Portugal.

Revisions 1988/89

The system was completely revised as from 1988/89. Like the Commission recommended for 1986/87, the levy is now being collected when the grain is marketed the first time.

The Commission defines in art. 1 reg. 2324/88 amending reg. 1432/88 the somewhat vague term "marketing". It takes place when the grain is sold for the first time

- to collectors, to trading companies or processors,
- to the intervention agencies, or
- to other farmers.

The CRL need not to be paid if the grain is sold to private persons for their own consumption.

The judgement of the European Court of Justice of June 29, 1988, relating to contract processing of grain (lawsuit No. 300/86) has caused much confusion. The verdict was that the levy was not due on quantities processed under contract during the 1986/87 and 1987/88 marketing years as long as the processing of grain by the producer of it on his own farm was exempted from the levy. The European Court of Justice saw in the regulation an inadmissable discrimination of contract processors.

The Commission accepted the consequences and prescribed in reg. 2324/88 that contract processing and processing by the producer of the grain should be treated alike so that the direct usage of grain on the farm is exempted from the levy (and also from the additional CRL, which will be described later on) as from July 1, 1988, no matter whether the contract processor or the grower processed the grain.

A prerequisite is, however, that the processed grain is being used (fed to animals) on the farm where it was produced by the farmer who ordered the contract processing. The exemption applies not only to contract processing by mobile equipment but also by stationary plants (compound feed factories) outside the farm where the grain was grown, provided:

a) that the grain has not been sold and that it remained at the grower's disposal, that the grower thus has no claim to the value-added tax which would have been the case, if the grain had been sold;
b) that the identity of the goods within a closed circuit must be sufficiently certain. This is, in the view of the Commission the case if the same quantity of the same kind of grain and quality (i.e. no feed wheat instead of bread wheat) is returned to the producer of the grain and is used as feed on his farm. It is therefore not necessary to prove the identity of every single kernel. Contract processing is the term used if the grain owned by a grower is processed by the use of equipment not belonging to the grower but to a third person not connected with the farm and if the equipment is worked by that person or by his/her employees.

Apart from grain used direct on the farm or contract processing of grain subsequently to be used on that farm, there exist exemptions from the levy for

- certified seed,
- small producers, and
- producers who have set aside at least 30% of their arable land and who do not sell more than 20 tons of grain.

The definition of a small producer is not at all easy in view of the very heterogeneous farm-size structure in the twelve member countries. The Council of Ministers had to decide that point by December 1, 1988. Until then, a small producer is for example in Germany a farmer with no more than 15 hectares agricultural area, who sells a maximum of 25 tons of grain. The maximum subsidy for a small producer is the CRL for 25 tons, i.e. 134.50 ECU.

The total subsidy to small producers is, like in the past year, 220

million ECU, 50% for both the basic and additional CRL (art. 2227/88), including 59.25 million ECU for France, 27.85 million ECU for Germany, 9.81 million ECU for the U.K., 8.85 million ECU for Denmark etc. (appendix 1 reg. 2389/88).
Greece, Italy, and Spain are still authorized to exempt their small producers directly from the CRL for the first 25 tons of grain.

The producer of the grain bears the cost of the co-responsibility. Liable to pay and legally responsible for the proper remittance of the CRL is the first buyer of grain (trader, processor, or another farmer). The amounts collected during three months have to be remitted to the authorities in charge (for example in Germany to the Bundeskasse in Bremen).
Buyers who purchase less than 250 tons per year from producers, remit the CRL only once a year, by July 31 of the subsequent marketing year. Apart from the basic co-responsibility levy of 5.38 ECU/ton, an additional CRL of also 5.38 ECU/ton was introduced at the start of the present marketing year, 1988/89, in case the EC production exceeds the quantity limit (guarantee threshold) of 160 million tons of grain (art. 4b of the basic regulation 2727/75).

Guarantee Threshold

This guarantee threshold of 160 million tons applies during the four marketing years 1988/89 to 1991/92. The Commission recommended initially a guarantee threshold of only 155 million tons, on the strength of an average domestic consumption 1984 to 1986 of approximately 140 million tons and annual imports of grain substitutes of 15 million tons which are taken into account in the calculation of the guarantee threshold. The EC heads of government decided during their summit meeting in February 1988 a guarantee threshold of 160 million tons for 1988/89. Reg. 2388/88 fixes the additional CRL for 1988/89 at 3% of the bread-wheat intervention price, 5.38 ECU/ton, the same as the basic CRL.

Additional Co-Responsibility Levy

The producer may, however, demand repayment of this additional CRL if the 1988 grain production in the twelve Community countries does not exceed the guarantee threshold of 160 million tons. If that quantity is exceeded by less than 3%, part of the additional CRL will be repaid but amounts below 0.50 ECU/ton will not be refunded nor will there be any refund if the total due to any one producer is below 25 ECU.

If a refund of the additional CRL or part thereof is due, producers have to claim it from the authorities in charge (in Germany for example from the main excise office). With their application, they must hand in all sales vouchers of the marketing year by the end of the first month of the new marketing year. The repayment will then be carried out by December 31 according to art. 3 reg. 1432/88.

The collection of or exemption from the additional CRL is on the same principles as for the basic CRL (reg. 1432/88), but it should not be overlooked that they are legally two entirely separate taxes each of which must be separately entered in the records and shown separately in the invoices. The two levies must not be combined in one amount.

If the guarantee threshold is exceeded by 3% (i.e. if production is 164.8 million tons or more), the entire additional CRL (5.38 ECU/ton) is retained by the authorities. Apart from that will the intervention prices for the <u>following marketing year</u> (as to be decided by the Council of Ministers) be <u>automatically</u> reduced by 3% even if the previous production exceeded the guarantee threshold by less than 3%. If the 1988 production is only slightly in excess of the guarantee threshold, the 1989/90 intervention price will be cut by 3%.

The following is a simplified example of the effects of the two co-responsibility levies on producer prices:

- case of wheat production in Germany:

producer price for wheat per ton	160.09 ECU
plus value-added tax	20.81 ECU
gross price	180.90 ECU
minus basic CRL	5.38 ECU
	175.52 ECU
minus additional CRL (if the EC production is 164.8 mill tons or more)	5.38 ECU
net price	170.14 ECU

<u>D. Regulations for the 1989/90 marketing year</u> [11,20]

At the February 1988 summit, EC member governments agreed to a package of policy measures designed to limit surplus production and rapid increases in budget expenditures for a range of commodities supported by the Common Agricultural Policy. For the grains sector, a system of automatic price stabilizers was established and an additional co-responsibility levy of 3% (over and above the 3% co-responsibility already in force) was imposed at the beginning of the 1988/89 marketing year on all off-farm grain sales. If production of wheat and coarse grains exceeds the "maximum guaranteed quantity" of 160 million tons (set for 1988/89 to 1991/92), support prices are automatically cut by 3% the following marketing year. If the production limit is not exceeded, the additional co-responsibility levy is fully refunded; if the limit is exceeded by less than 3%, the additional levy is partially refunded on a prorated basis.

The EC Commission estimated that grain production in 1988/89 exceeded the maximum guaranteed quantity by 2.5 million tons or 1.6%. Thus intervention prices for grains were reduced by 3% for the 1989/90 marketing year and 1.4% of the additional co-responsibility levy collected in 1988/89 (2.51 ECUs per ton) will be refunded. Due to the cut in intervention prices for grains, the basic co-responsibility levy (equal to 3% of the intervention price for wheat) will decline from 5.38 ECUs per ton in 1988/89 to 5.22 ECUs in 1989/90.

From the 1991/92 marketing year, a system of aid to small producers in the field crop sector (grains, oilseeds, protein crops) will replace the current system of aid for small grain producers. This aid is fixed at 50 ECU/hectare in the less favored and upland areas, and at 30 ECU/hectare in the rest of the Community. In all cases, the aid is limited to a maximum area of 10 hectares of field crops per beneficiary. The aid is to be restricted to producers with less than 20 hectares of utilized agricultural area. The measure will be financed within the framework of market related actions of rural development.

IV. Analysis of the Co-Responsibility Levy

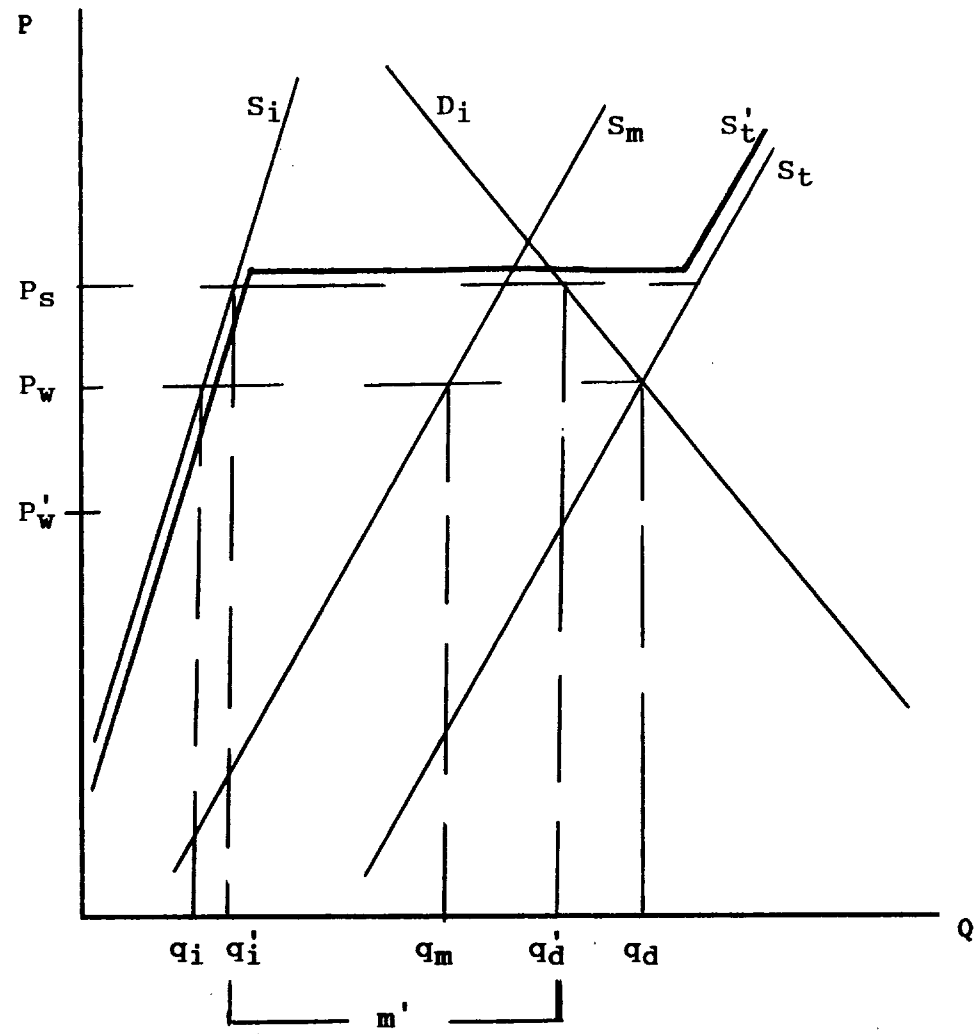
The first two chapters provided a brief overview of the European Community and its Common Agricultural Policy. This was followed in the proceeding chapter by the introduction of the concept and the regulations of the co-responsibility levy.

The forthcoming chapter will provide an analysis of the co-responsibility levy. Before starting a detailed analysis, a thorough graphical evaluation of the events leading to the introduction of the levy would be appropriate at this point.

A. Background investigation [21]

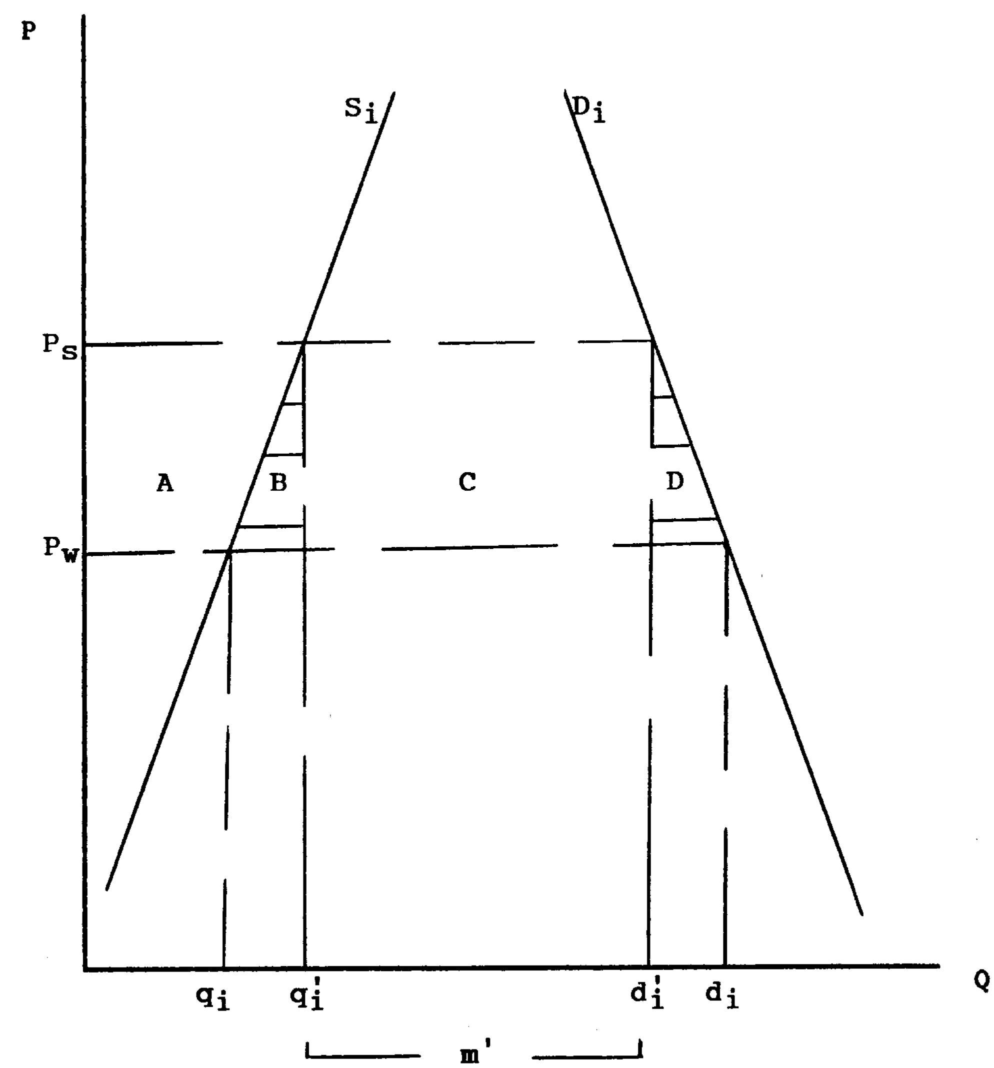
In the early years of the Common Agricultural Policy, the European Community was a net importer of many key agricultural commodities. Import levies provided a funding source for many Community activities. Figure 1 illustrates the basic principles and effects of the CAP. The addition of the domestic supply curve S_i and the import supply curve S_m yield the total supply curve S_t facing the Community. In the absence of any price support the domestic price will equal the world market price P_w. Since the central goal of the CAP is the reduction of the disparity between agricultural and non-agricultural incomes, a new minimum import price was introduced in the early 1960's. This threshold price P_s is set above the world market price P_w. The difference between these two prices is made up by the variable import levy. Consequently the new total supply curve S_t' is identical to S_i below P_s, completely elastic at P_s, and identical to S_t above the threshold price. Because of the new support price, domestic production increased, and imports declined. As the EC is a large country in economic terms the reduced imports have a negative effect on the world market price. As a consequence, the world market price declined to P_w' and the margin of the variable levy increased. The social welfare effects of the variable import levy are illustrated in figure 2. Domestic producers and the government are the gainers, whereas the consumers in the Community are loosing under this kind of scheme. Overall social welfare losses to society are shown in the shaded areas B (efficiency loss) and D (deadweight consumption loss).

Figure 1: Import Levy and price support



Source: Von Witzke, Harald. The Common Agricultural Policy of the European Community: A Survey with Special References to U.S. Agriculture. Staff Paper P85-20, Dept. of Agr. and Applied Econ., Univ. of Minnesota, St. Paul, May 1985. p. 20.

Figure 2: Social Welfare Effects of the Variable Import Levy



Source: Lecture notes: AGEC 5730

change in PS	:	A	> 0
change in CS	:	A + B + C + D	< 0
change in G	:	C	> 0
change in W	:	B + D	< 0

Society is worse off as they were before the introduction of the levy.

It can be said that a manipulation of relative market prices for distributional reasons causes welfare losses and very often adverse distributional side effects.

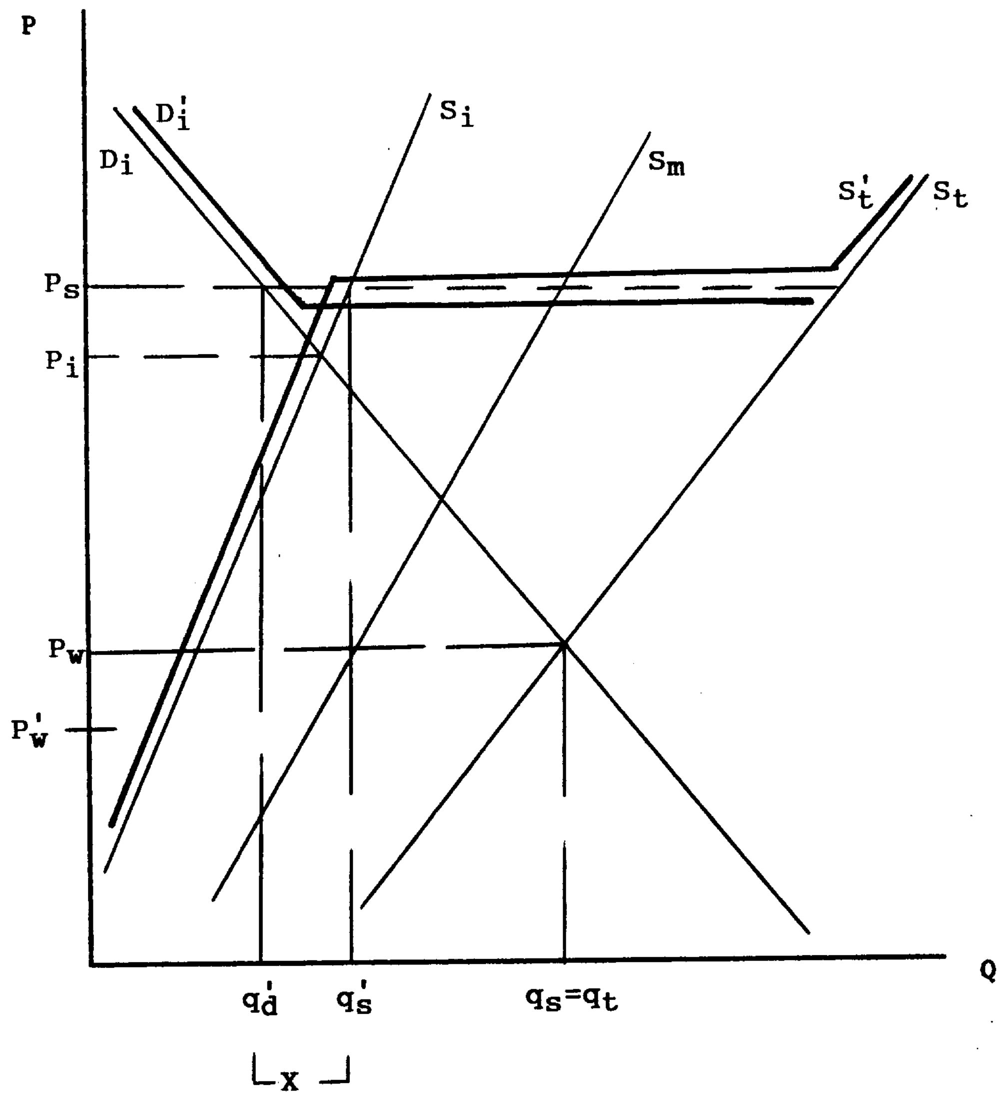
In the early 1980's the EC emerged as a net exporter of many key agricultural commodities. This was due to technological progress in conjunction with the CAP measures mentioned in chapter II. Figure 3 illustrates this situation. At the domestic support price P_s domestic supply exceeds domestic demand. As the agricultural prices are supported via import restrictions, P_s can no longer be maintained and the new price now would be P_i. In order to prevent this, the EC introduced the so-called 'intervention price' at which the national intervention agencies step in to buy any excess grain production. P_i is slightly lower than P_s (adjusted for transportation costs) in order to avoid imports when domestic supply exceeds domestic demand. For the purpose of this graphical illustration it will be assumed that the intervention price is equal to the threshold price P_s with the result that the domestic demand curve D' is identical to D above P_s and completely elastic at P_s. The intervention agencies purchase all the surplus production ($q_s'q_d'$).

In order for the EC to sell this excess production onto the world market at prevailing world market prices, the EC has to subsidize this part of the production by the means of the export restitution. The overall social welfare effects are illustrated in figure 4. Producers are the only gainers in this game, while government and consumers loose. Overall social welfare effects are depicted in the following table.

change in PS	:	A + B + C	> 0
change in CS	:	A + B	< 0
change in G	:	B + C + D + E + F + G + H	< 0
change in W	:	B + D + E + F + G + H	< 0

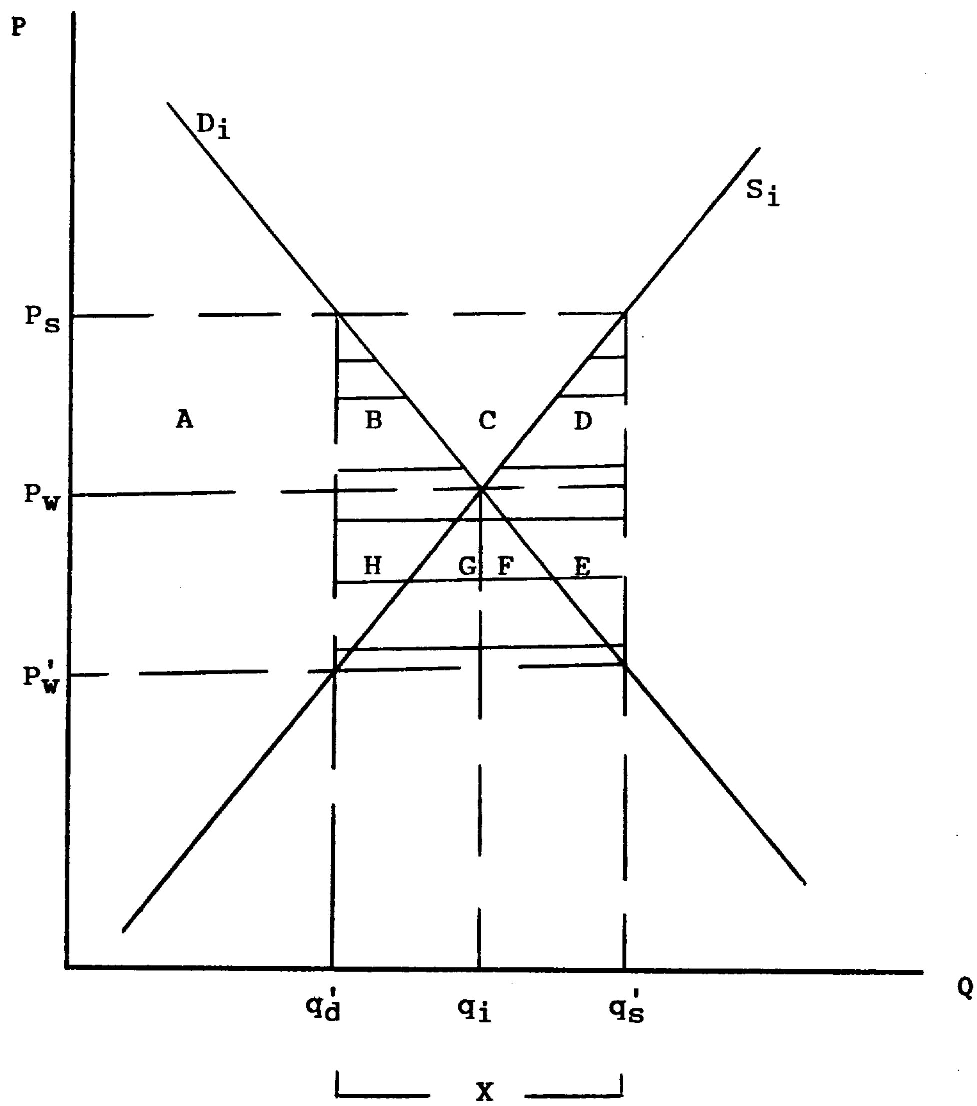
In conclusion it can be said that the policies introduced by the Common Agricultural Policy do not represent a zero sum game and that there is a deadweight loss to society: producers gain less than consumers and

Figure 3: Intervention Price and Export Restitution



Source: von Witzke, Harald. The Common Agricultural Policy of the European Community: A Survey with Special References to U.S. Agriculture. Staff Paper P85-20, Dept. of Agr. and Applied Econ., Univ. of Minnesota, St. Paul, May 1985. p. 22.

Figure 4: Social Welfare Effects of an Export Restitution and Price Support



Source: Lecture Notes: AGEC 5730

government loose.

The proceeding analysis in part B will present a graphical interpretation of the effects of the co-responsibility levy on the European Community.

B. Graphical evaluation [12,14]

For many years the Common Agricultural Policy has relied heavily on the following three principles:

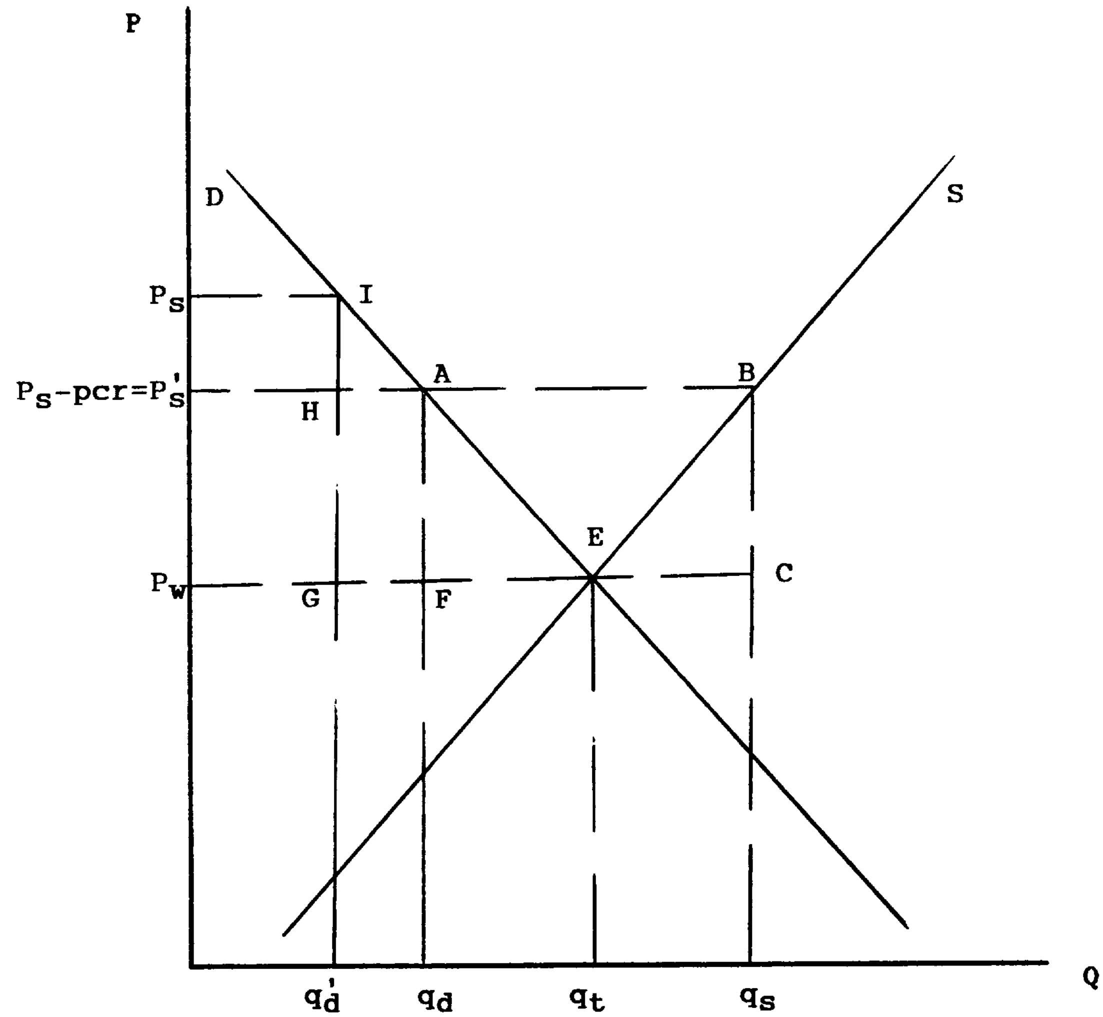
1. a common market for agricultural products;
2. Community preference; and,
3. financial solidarity.

In 1986, a fourth principle has been introduced into the Common Agricultural Policy, namely the co-responsibility levy. The levy was adopted by the Council of Ministers to limit the budgetary expenditure on grains produced in the Community. In the case of grains two levies apply. A base levy, amounting to 3% (5.38 ECU/t) of the intervention price is augmented by a supplementary levy of the same magnitude (i.e. 3%, or 5.38 ECU/t). Both levies are collected from individual producers at the first point of sale, but the supplementary levy is refundable if the Minimum Guaranteed Quantity (MGQ) of 160 million tons is not exceeded. However, farmers who produce less than 25 tons of grain are exempted from the levy. If the MGQ is exceeded, there is also a deferred price penalty in that the following year's intervention price is automatically reduced by the amount of the supplementary levy. The social welfare effects of the co-responsibility levy are illustrated in figures 5 and 6. For simplification only one levy is assumed. In figure 5, producer gains have been reduced by the introduction of the levy. The overall reduction of the producer surplus will finally depend on the magnitude of the levy or levies. However, assuming 'one levy', the overall social welfare effects are tabulated below.

change in PS :	P_s' B E P_w	> 0
change in CS :	P_s I E P_w	< 0
change in G :	H B C G	< 0
	P_s I H P_s'	> 0
change in W :	B C E + I E G	< 0

Figure 6 assumes price formation and trade under the assumption that

Figure 5: Producer Co-Responsibility Levy

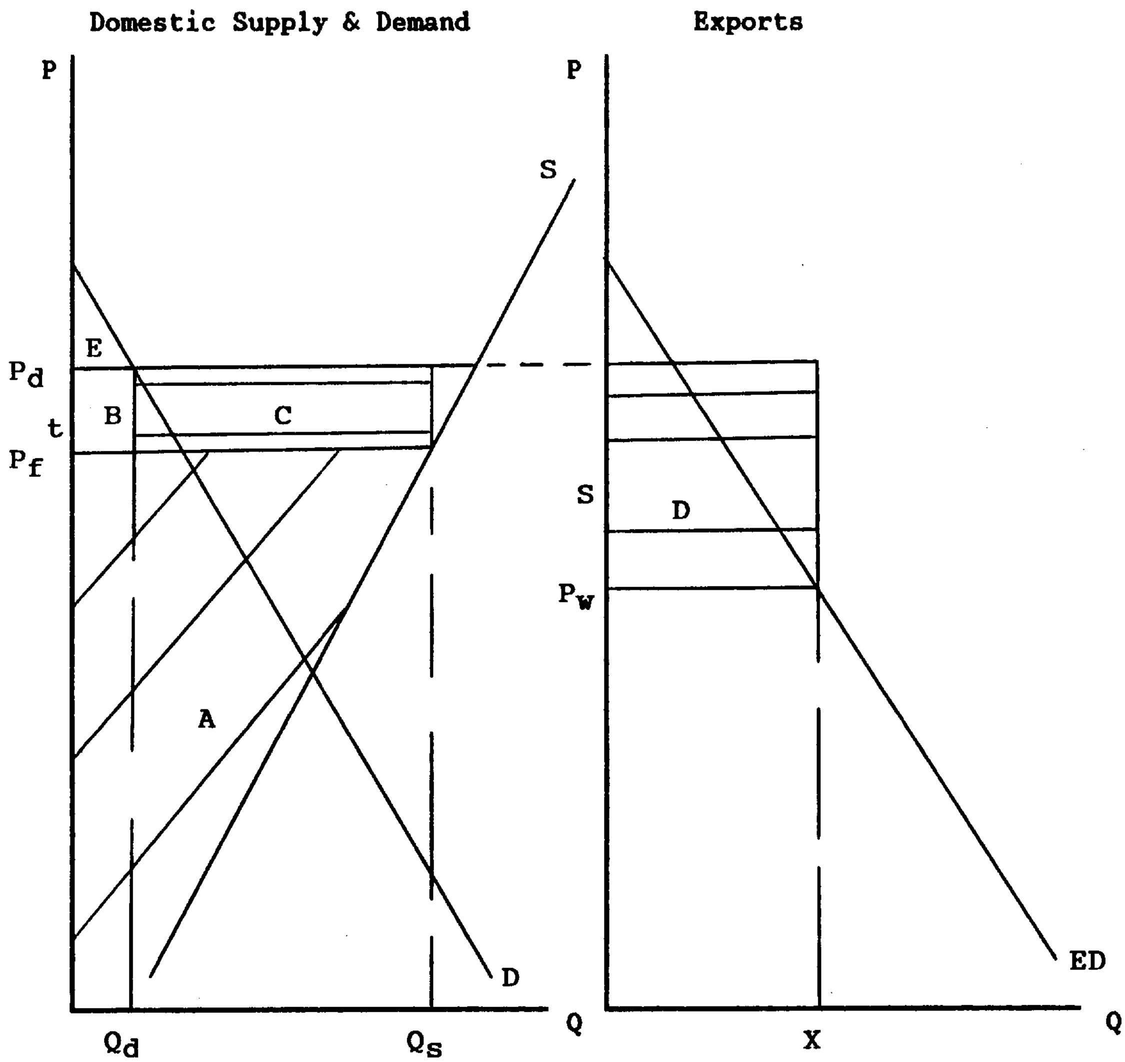


Source: Lecture Notes: AGEC 5730

the domestic support price and the co-responsibility levy are given. For demonstrational purposes the analysis will be undertaken under two scenarios. Under scenario 1, producers are faced with a co-responsibility levy on total production. Therefore they will receive price P_d-t on all grains produced, and production will be at Q_s. The associated producer surplus can be found in area A. Consumers, on the other hand, pay a price of P_d and obtain in return quantity Q_d. Consumer surplus can be found in area E. Community outlays consist of export restitution less the receipt of the co-responsibility levy. This is pictured in areas D-(B+C).

However, for social and political reasons, the Council of Ministers decided to exempt small producers which produce less than 25 tons of

Figure 6: Price Formation and Trade with Co-Responsibility



Source: Gallagher,P.W. 'The Grain Sector Of The European Community: Policy Formation, Price Determination, And Implications For Trade'. Am. J. Agr. Econ. 70 (1988) : p. 769.

grains per year. The effects of this policy are illustrated in scenario 2. It is estimated that about 40% of domestic production would be exempted from the co-responsibility levy, due to the decision of the Council. This will mean, that 40% of the grain production will receive a price of P_d, whereas the remaining 60% will receive a price of P_d-t or P_f. The consumer price remains unchanged, which will leave the consumer surplus area untouched. Government outlays, on the contrary, will be increased from D-(C+B) to D-C, because of the effects of the exemption of small producers from the levy. In contrast to scenario 1, producer surplus losses have been reduced at the expense of the Community budget. For the purpose of this illustration, area B has been depicted as the loss in revenue due to the exemption. Overall, it can be said, that the introduction of the co-responsibility levy has reduced the budgetary outlays to some degree. It is hoped, that this trend will continue in the future. The following segment of this chapter will look at the levy from an empirical point of view using the 1988 production year.

C. Empirical estimation [3,7,17]

The results of this investigation are derived using standard partial equilibrium comparative static analysis in the Marshallian economic surplus framework. In order to simplify the analysis, only the wheat sector of the Community will be considered here. The year of the analysis is calendar 1988. The Agricultural Situation in the Community, Commission of the European Communities, and Toepfer International, Hamburg, were used as a source for production, consumption, and price data. Supply and demand elasticities were taken from OECD. The basic analytical structure of the model is represented by equations (1) through (5):

(1) net social loss in production

$$NSL_p = 1/2\ t_p^2\ n_s\ V\ ,$$

(2) net social loss in consumption

$$NSL_c = 1/2\ t_c^2\ n_d\ W\ ,$$

(3) welfare gain of producers

$$G_p = Q\ (\ P_p - P_w\ ) - NSL_p\ ,$$

(4) welfare loss of consumers

$$G_c = C\ (\ P_w - P_c\ ) + NSL_c\ ,$$

(5) government expenditure

$G = X (P_w - P_p)$,

where Q is production at domestic prices; P_w, border prices; P_p, prices faced by domestic producers; P_c, prices faced by domestic consumers; t_c and t_p, proportion of tariff in domestic price at the consumer (t_c) or the producer (t_p) level; n_s, elasticity of domestic supply; n_d, elasticity of domestic demand; V, value of domestic production at P_p; W, value of consumption at P_c; C, consumption at domestic price; and, X, exports from the Community.

The analysis will be undertaken using four scenarios. Under the base scenario, no co-responsibility levy is assumed. The second case includes the base levy, which is followed in the third case by the inclusion of the base levy and 50% of the additional levy. The fourth case contains the full amount of both levies. In addition, the analysis will present two elasticities of supply of .46 and .80, respectively. The four scenarios will be presented first, followed by a discussion of the results.

(1) <u>Base scenario</u> (no co-responsibility levy is assumed)

Production	: 75,494,000 tons
Intervention price	: 179.44 ECU/ton
Consumption	: 63,708,000 tons
Consumer price	: 179.44 ECU/ton
Exports	: 11,786,000 tons
CIF Rotterdam price	: 100.12 ECU/ton (12 months average)
Value of production (V)	: 13,547,000,000 ECU
Value of consumption (W)	: 11,432,000,000 ECU

n_s : .46 n_s : .80 n_d : −.17 t_p : .442 t_c : .442

(1) $NSL_p = 1/2\ t_p^2\ n_s\ V$

$= (1/2)\ (.442)^2\ (.46)\ (13,547,000,000)$

$NSL_p = \underline{608,717,000 \text{ ECU}}$

$= (1/2)\ (.442)^2\ (.80)\ (13,547,000,000)$

$NSL_p = \underline{1,058,638,000 \text{ ECU}}$

(2) $NSL_c = 1/2\ t_c^2\ n_d\ W$

$= (1/2)\ (.442)^2\ (-.17)\ (11,432,000,000)$

$NSL_c = \underline{-189,839,000 \text{ ECU}}$

(3) $G_p = Q (P_p - P_w) - NSL_p$

$= 75,494,000\ (179.44-100.12) - 608,717,000$

G_p = <u>5,379,483,000 ECU</u>

= 75,494,000 (179.44-100.12) - 1,058,638,000

G_p = <u>4,929,562,000 ECU</u>

(4) $G_c = C \; (P_w - P_c) + NSL_c$

= 63,708,000 (100.12-179.44) + (-189,839,000)

G_c = <u>-5,243,139,000 ECU</u>

(5) $G = X \; (P_w - P_p)$

= 11,786,000 (100.12-179.44)

G = <u>-934,870,000 ECU</u>

Total welfare loss to society: <u>798,556,000 ECU</u> (n_s = .46)

Total welfare loss to society: <u>1,248,477,000 ECU</u> (n_s = .80)

(2) <u>Second scenario</u> (the basic levy of 5.38 ECU/ton is introduced, but production does not exceed the MGQ of 160 million tons; 40% of production is exempted from the levy)

Production	: 45,296,400 tons @ 174.06 ECU/ton
	: 30,197,600 tons @ 179.44 ECU/ton
Consumption	: 63,708,000 tons @ 179.44 ECU/ton
Exports	: 11,786,000 tons
CIF Rotterdam price	: 100.12 ECU/ton (12 months average)
Value of production (V)	: 13,303,000,000 ECU
Value of consumption (W)	: 11,432,000,000 ECU

n_s : .46 n_s : .80 n_d : -.17 t_p : .425 (for 174.06 ECU/ton)
t_p : .442 (for 179.44 Ecu/ton) t_c : .442

(1) $NSL_p = 1/2 \; t_p^2 \; n_s \; V$

= $(1/2) \; (.425)^2 \; (.46)$ (7,884,300,000) = 327,543,000 ECU

= $(1/2) \; (.442)^2 \; (.46)$ (5,418,700,000) = 243,482,000 ECU

NSL_p = <u>571,025,000 ECU</u>

= $(1/2) \; (.425)^2 \; (.80)$ (7,884,300,000) = 569,641,000 ECU

= $(1/2) \; (.442)^2 \; (.80)$ (5,418,700,000) = 423,448,000 ECU

NSL_p = <u>993,089,000 ECU</u>

(2) $NSL_c = 1/2 \; t_c^2 \; n_d \; W$

= $(1/2) \; (.442)^2 \; (-.17)$ (11,432,000,000)

NSL_c = <u>-189,839,000 ECU</u>

(3) $G_p = Q \; (P_p - P_w) - NSL_p$

= 45,296,400 (174.06-100.12) - 327,543,000

= 3,349,200,000 - 327,543,000 = 3,021,657,000 ECU

= 30,197,600 (179.44-100.12) - 243,482,000

$= 2,395,300,000 - 243,482,000 = 2,151,818,000$ ECU

G_p = <u>5,173,475,000 ECU</u>

$= 45,296,400\ (174.06-100.12) - 569,641,000$

$= 3,349,200,000 - 569,641,000 = 2,779,559,000$ ECU

$= 30,197,600\ (179.44-100.12) - 423,448,000$

$= 2,395,300,000 - 423,448,000 = 1,971,852,000$ ECU

G_p = <u>4,751,411,000 ECU</u>

(4) $G_c = C\ (\ P_w - P_c\ ) + NSL_c$

$= 63,708,000\ (100.12-179.44) + (-189,839,000)$

G_c = <u>-5,243,139,000 ECU</u>

(5) $G = X\ (\ P_w - P_p\ )$ + levy revenue

$= 11,786,000\ (100.12-179.44) + (45,296,400)\ (5.38)$

G = <u>-691,180,000 ECU</u>

Total welfare loss to society: <u>760,860,000 ECU</u> ($n_s = .46$)

Total welfare loss to society: <u>1,182,928,000 ECU</u> ($n_s = .80$)

(3) <u>Third scenario</u> (the MGQ has been exceeded by 1.5% (total production of 162.4 million tons); the basic levy (5.38 ECU/ ton) and half of the additional levy (2.69 ECU/ton) will be retained by the authorities; 40% of production is exempted).

Production	: 45,296,400 tons @ 171.37 ECU/ton
	: 30,197,600 tons @ 179.44 ECU/ton
Consumption	: 63,708,000 tons @ 179.44 ECU/ton
Exports	: 11,786,000 tons
CIF Rotterdam price	: 100.12 ECU/ton (12 months average)
Value of production (V)	: 13,181,100,000 ECU
Value of consumption (W)	: 11,432,000,000 ECU

n_s : .46 n_s : .80 n_d : -.17 t_p : .416 (for 171.37 ECU/ton)
t_p : .442 (for 179.44 ECU/ton) t_c : .442

(1) $NSL_p = 1/2\ t_p^2\ n_s\ V$

$= (1/2)\ (.416)^2\ (.46)\ (7,762,400,000) = 308,966,000$ ECU

$= (1/2)\ (.442)^2\ (.46)\ (5,418,700,000) = 243,482,000$ ECU

NSL_p = <u>552,448,000 ECU</u>

$= (1/2)\ (.416)^2\ (.80)\ (7,762,400,000) = 537,322,000$ ECU

$= (1/2)\ (.442)^2\ (.80)\ (5,418,700,000) = 423,448,000$ ECU

NSL_p = <u>960,770,000 ECU</u>

(2) $NSL_c = 1/2\ t_c^2\ n_d\ W$

$= (1/2)\ (.442)^2\ (-.17)\ (11,432,000,000)$

NSL_c = <u>-189,839,000 ECU</u>

(3) $G_p = Q\ (\ P_p - P_w\ ) - NSL_p$

= 45,296,400 (171.37-100.12) - 308,966,000

= 3,227,400,000 - 308,966,000 = 2,918,432,000 ECU

= 30,197,600 (179.44-100.12) - 243,482,000

= 2,395,300,000 - 243,482,000 = 2,151,818,000 ECU

G_p = <u>5,070,250,000 ECU</u>

= 45,296,400 (171.37-100.12) - 537,322,000

= 3,227,400,000 - 537,322,000 = 2,690,078,000 ECU

= 30,197,600 (179.44-100.12) - 423,448,000

= 2,395,300,000 - 423,448,000 = 1,971,852,000 ECU

G_p = <u>4,661,930,000 ECU</u>

(4) $G_c = C\ (\ P_w - P_c\ ) + NSL_c$

= 63,708,000 (100.12-179.44) + (-189,839,000)

G_c = <u>-5,243,139,000 ECU</u>

(5) $G = X\ (\ P_w - P_p\ )$ + levy revenue

= 11,786,000 (100.12-179.44) + (45,296,400) (8.07)

G = <u>-569,330,000 ECU</u>

Total welfare loss to society: <u>741,610,000 ECU</u> (n_s = .46)

Total welfare loss to society: <u>1,150,609,000 ECU</u> (n_s = .80)

(4) <u>Fourth scenario</u> (the MGQ has been exceeded by 3% (total production of 164.8 million tons); the basic levy (5.38 ECU/ ton) and the additional levy (5.38 ECU/ton) will be retained by the authorities; 40% of production is exempted; in addition, the following year's price will be reduced by 3%).

Production	: 45,296,400 tons @ 168.68 ECU/ton
	: 30,197,600 tons @ 179.44 ECU/ton
Consumption	: 63,708,000 tons @ 179.44 ECU/ton
Exports	: 11,786,000 tons
CIF Rotterdam price	: 100.12 ECU/ton (12 months average)
Value of production (V)	: 13,059,300,000 ECU
Value of consumption (V)	: 11,432,000,000 ECU

n_s : .46 n_s : .80 n_d : -.17 t_p : .406 (for 168.06 ECU/ton)
t_p : .442 (for 179.44 ECU/ton) t_c : .442

(1) $NSL_p = 1/2\ t_p^2\ n_s\ V$

= $(1/2)\ (.406)^2\ (.46)$ (7,640,600,000) = 289,673,000 ECU

= $(1/2)\ (.442)^2\ (.46)$ (5,418,700,000) = 243,482,000 ECU

NSL_p = <u>533,155,000 ECU</u>

$= (1/2)\ (.406)^2\ (.80)\ (7,640,600,000) = 503,778,000$ ECU

$= (1/2)\ (.442)^2\ (.80)\ (5,418,700,000) = 423,448,000$ ECU

NSL_p = <u>927,226,000 ECU</u>

(2) $NSL_c = 1/2\ t_c^2\ n_d\ W$

$= (1/2)\ (.442)^2\ (-.17)\ (11,432,000,000)$

NSL_c = <u>-189,839,000 ECU</u>

(3) $G_p = Q\ (\ P_p - P_w\ ) - NSL_p$

$= 45,296,400\ (168.68-100.12) - 289,673,000$

$= 3,105,500,000 - 289,673,000 = 2,815,827,000$ ECU

$= 30,197,600\ (179.44-100.12) - 243,482,000$

$= 2,395,300,000 - 243,482,000 = 2,151,818,000$ ECU

G_p = <u>4,967,645,000 ECU</u>

$= 45,296,400\ (168.68-100.12) - 503,778,000$

$= 3,105,500,000 - 503,778,000 = 2,601,722,000$ ECU

$= 30,197,600\ (179.44-100.12) - 423,448,000$

$= 2,395,300,000 - 423,448,000 = 1,971,852,000$ ECU

G_p = <u>4,573,574,000 ECU</u>

(4) $G_c = C\ (\ P_w - P_c\ ) + NSL_c$

$= 63,708,000\ (100.12-179.44) + (-189,839,000)$

G_c = <u>-5,243,139,000 ECU</u>

(5) $G = X\ (\ P_w - P_p\ )$ + levy revenue

$= 11,786,000\ (100.12-179.44) + (45,296,400)\ (10.76)$

G = <u>-447,480,000 ECU</u>

Total welfare loss to society: <u>722,994,000 ECU</u> ($n_s = .46$)

Total welfare loss to society: <u>1,117,065,000 ECU</u> ($n_s = .80$)

Recapitulating the above results:

<u>Elasticity of supply: .46</u>

	G_p	G_c	NSL_p	NSL_c	G	Total Welfare Loss
Base scenario:	5,379,483,000	-5,243,139,000	608,717,000	-189,839,000	-934,870,000	798,556,000
2. scenario :	5,173,475,000	-5,243,139,000	571,025,000	-189,839,000	-691,180,000	760,864,000
3. scenario :	5,070,250,000	-5,243,139,000	552,448,000	-189,839,000	-569,330,000	742,287,000
4. scenario :	4,967,645,000	-5,243,139,000	533,155,000	-189,839,000	-447,480,000	722,994,000

Elasticity of supply: .80

	G_p	G_c	NSL_p	NSL_c	G	Total Welfare Loss
Base scenario:	4,929,562,000	-5,243,139,000	1,058,638,000	-189,839,000	-934,870,000	1,248,477,000
2. scenario :	4,751,411,000	-5,243,139,000	993,089,000	-189,839,000	-691,180,000	1,182,928,000
3. scenario :	4,661,930,000	-5,243,139,000	960,770,000	-189,839,000	-569,330,000	1,150,609,000
4. scenario :	4,573,574,000	-5,243,139,000	927,226,000	-189,839,000	-447,480,000	1,117,065,000

The results of the above analysis are not without controversy. While the method is widely used, there is in fact, a considerable body of literature and an ongoing theoretical debate regarding the appropriateness of using the underlying utility functions in evaluating welfare gains and losses. However, as a tool of welfare economics, it demonstrates theoretically that it is usually a very good approximation to the appropriate welfare measures.

As the results of the analysis demonstrate, the introduction of the co-responsibility levies have somewhat eased the burden placed on the Common Agricultural Policy. As a consequence of the levy, domestic producers witnessed a reduction in the producer surplus. Nonetheless, domestic consumers experienced no benefits from this change, since consumer prices in the Community remained unchanged. Government, on the other hand, was able to reduce its budgetary expenditure. However, the budgetary outlays presented in the analysis do not take into account storage costs and other types of producer aids, and are therefore grossly underestimated. For example, storage costs alone exceeded 1.2 billion ECU in 1988. This translates to over 500 million ECU for the wheat sector alone. If no co-responsibility levy is assumed, total expenditure for the wheat sector would exceed 1.5 billion ECU. But, for simplicity reasons, these outlays have been omitted from the analysis.

An increase in the elasticity of supply will not only affect the welfare gains of producers, but also the total welfare losses to society. A change in the elasticity from .46 to .80 increased total welfare losses 36% under the base scenario, and 54% when both levies were applied. In summary, the choice of elasticity is crucial in determining the outcome of the estimation.

Overall, the above scenarios have demonstrated, that the co-responsibility levy was able to reduce the net social welfare losses to society.

The proceeding part D of this chapter will appraise the co-responsibility levy and the effects it has on the grain sector of the European Community.

D. Appraisal of the co-responsibility levy

The co-responsibility levy, adopted by the Council of Ministers in 1986, is a policy designed to control the cost of grain surplus. The basic goals of the levy can be summarized as follows:

- to make producers responsible for financing all or part of the expenditure of surplus disposal; and,
- to make producers more aware of the realities of the market.

As mentioned before in chapter III, the basic levy and the additional levy are applied at the point of first sale, rather than on all grains produced in the Community. This was done for simplification of administrative controls and to encourage the use of Community produced grains (rather than imported substitutes) on farms. The exemption of the first 25 tons was included to take account of the social implications of the levy, particularly its effect on the incomes of structurally weaker farms. It was also a political decision to set the basic levy and the additional levy at 3% each. This size of the levy falls far short of covering the total export subsidies. Warren and Brookes[1] estimated in 1985 the size of the levy to be charged in order to make the co-responsibility levy pay for all the surplus production. In their opinion, the levy charged would have been about 9% on the intervention price if total production was considered. However, if the exemptions granted by the Community are included, the levy charged on marketed grain would increase to over 12% of the intervention price. It is unlikely that a levy of this size would ever be introduced on a flat rate basis, and the Commission itself made it clear that applying a levy

[1] Warren, R. M. and G. J. Brookes. Cereals in the EEC. Policy options and their impact on the UK market. Dept. of Agric. Econ., Dept. of Agric. Marketing, Univ. of Newcastle upon Tyne, UK. Discussion Paper (No. DP 15), December 1985.

equal to the total cost of surplus disposal is a 'long-term objective' rather than something which should be done immediately. As a consequence of these actions, the co-responsibility levy will cover only 43% of the costs of surplus grain production in the Community in 1990. Nonetheless, this is a noticeable improvement over the previous years. The following table will illustrate this.

Table 1: Export refunds and co-responsibility levy receipts

(MIO ECU)

	1987	1988	1989	1990 (1)
Export refunds	3,156.8	3,083.0	2,773	2,961
Co-responsibility levy receipts	378.7	677.5	906	1,280
% covered by levy	12	22	33	43

(1) 1990 preliminary draft

Source: Data taken from: Commission of the European Community. The Agricultural Situation in the Community. 1989 Report. Brussels, Belgium.

Export refunds between 1987 and 1990 have been steady at around 3 billion ECU per year. On the other hand, levy receipts have increased from 378.7 million ECU in 1987 to over 1.2 billion ECU in 1990. The corresponding increase in the % coverage by the levy increased from 12% in 1987 to 43% in 1990. It is estimated that it will take until the 1995/96 marketing year before the co-responsibility levy will be able to cover all the expenditure created by the export refunds. On the cost side of the equation, the co-responsibility levy has decreased the budgetary expenditure of the surplus production of the European Community.

On the contrary, the co-responsibility levy has not yet had any major effects on the production decisions of Europe's farmers. Actually, over the past three years, production has increased by no less than 10 million tons, due in part to the accession of Spain and Portugal. The stabilizer mechanisms in conjunction with the co-responsibility levy do not appear to be having any major effects on production. The Commission[2] expects that the area planted to grains could increase and yields will certainly increase during the next few years. The main reason for a larger than expected boost to grain production is that the price cuts imposed on rapeseed and other oilseeds - over 20% in two years - is much greater than the reduction in grain support prices. The trend of arable area being switched out of grains into oilseeds is therefore likely to be reversed. This could lead again to higher surplus production, which in turn could increase the budgetary expenditure on the grain sector in the European Community. As long as the Community cannot balance both sides (cost and production) of the equation, the final goal of the co-responsibility levy might never be reached.

In summary, the advantages and disadvantages of the co-responsibility levy may be listed as follows[3] :

<u>advantages</u>

- because the co-responsibility levy raises funds the effective reduction in price to the producer in order to meet a specific budgetary target does not have to be as great as it would have to be with a 'straight' price cut. It has been estimated that every 1% of the levy would bring in four times more to the budget than would be saved by a 1% price cut;
- the idea of 'co-responsibility' has a 'community' feel;
- there is a potential for exclusion and special cases; and,
- producers are seen to be contributing to their own upkeep.

<u>disadvantages</u>

- it can be costly, and for some products difficult to collect;
- under certain circumstances the levy can also be a tax on consumers (this would be the case, if the Council raises the

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[2] Agra Europe No. 1323. February 3, 1989.

[3] Warren, R. M. and G. J. Brookes. Cereals in the EEC. Policy options and their impact on the UK market. Dept. of Agric. Econ., Dept. of Agric. Marketing, Univ. of Newcastle upon Tyne, UK. Discussion Paper (No. DP 15), December 1985.

institutional CAP prices to offset the incidence of the levy on producers); and,

- if institutional prices are increased or world market prices fall, the co-responsibility levy must be adjusted accordingly or it will no longer cover the cost of disposal.

The proceeding chapter of the paper will close this analysis of the co-responsibility levy with some concluding remarks.

V. Concluding Remarks

The common organization of the market in grains is one of the central elements of the Common Agricultural Policy of the European Community. The objectives of the policy are the advancement of agricultural incomes, technical and economic efficiency, and the stabilization of markets. This is accomplished through a system of international and intersectoral income transfers. These relocations from the nonfarm to the farm sector take on many different forms, the most important of these being indirect income transfers, also referred to as 'invisible transfers', since consumers are forced to pay higher than world market prices for agricultural products.

Today, even more so than in the past, these schemes generate not only high budgetary expenditure for storage and inferior use of surplus products, they also create international trade distortions. Despite the fact that these strategies have been employed for a long time, it hasn't really succeeded in resolving the original and persistent problem, which is the reduction of the income disparity between the farm and the nonfarm sector.

As a solution to the budgetary dilemma created by the common organization of the market in grains, the Council of Ministers introduced in 1986 the co-responsibility levy, as a response designed to control the cost of grain surplus. However, this instrument (it was decided that the co-responsibility levy was, to begin with, to run until 1991/92) is more likely to be a short-term solution, since it does not really address the problem of overproduction. Consequently, the authorities in the Community will have to look at other options (i.e. limited support payments, direct income transfers, etc.) as an alternative for solving the Community's problems.

As a concluding remark it can be said, as long there is no guarantee that prices finally prevailing at the market place will actually lead to market balance, the mere reduction of subsidies, or the imposition of the co-responsibility levy do not solve the basic production, distribution, and income problems of the European Community.

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