

# Agrosynergie

Groupement Européen d'Intérêt Economique

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Evaluations fruit and vegetables

## Evaluation of withdrawals and crisis management in fruit and vegetables sector

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### Executive summary

March 2007

This study is part of the evaluation of the Fruit and Vegetable (F&V) Common Market Organisation (CMO). The aim of the study is to provide an assessment of the impact of crisis management measures implemented in the F&V sector, and of withdrawals in particular.

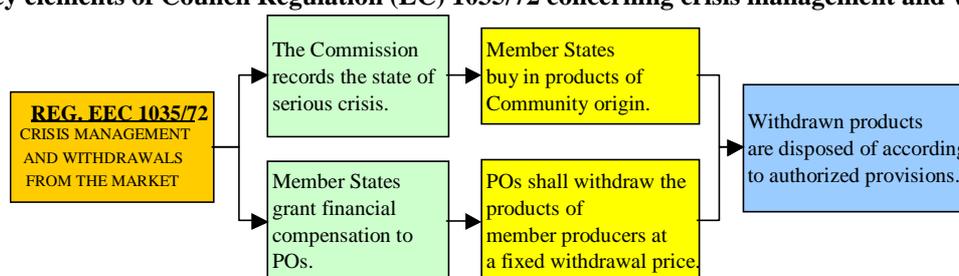
The evaluation covers the period following the coming into force of Council Regulation (EC) 2200/96 and includes a comparison with the period before the 1996 reform (1991-1996). The evaluation is extended to the EU 25 area (EU 15 until 2004).

As required by the Terms of Reference, the study is structured according to four themes: market stability, producers' income, the environment, management and efficiency. The evaluation report is supplemented by descriptions of the existing regulatory framework and of the F&V sector.

## 1. THE REGULATORY FRAMEWORK

Crisis management measures, and the withdrawals tool in particular, had already been introduced in 1972, when the **first F&V CMO** was set up by Council Regulation (EEC) 1035/72 of 18 May 1972, albeit with different implementation procedures. The **aim of Council Regulation (EEC) 1035/72** was that of enabling the sector to cope with serious market disruptions deriving from production surpluses. Furthermore, the regulation sought to avoid both the destruction of withdrawn products and their re-introduction in the market. To this end the regulation established a series of possible alternative destinations. The framework for crisis management and withdrawals, as established by Council Regulation (EEC) 1035/72, is summarised below.

**Fig. 1 - Key elements of Council Regulation (EC) 1035/72 concerning crisis management and withdrawals**



Source: Council Regulation (EEC) 1035/72

**In 1996, the withdrawal regime was substantially modified by Council Regulation (EC) 2200/96 of 28 October 1996. The most relevant regulatory changes** concerning crisis management and withdrawals related to:

- a simplification of the indemnity calculation system,
- a series of reductions of the level of Community compensation,
- the introduction, at Producer Organisation (PO) level, of a decreasing ceiling for the maximum volume of products that can be eligible for Community withdrawal compensation,
- rules for the disposal of withdrawn products,
- the role of POs and Associations of Producer Organisations (APOs) in the withdrawal management scheme,
- the introduction of special provisions for environmental protection relating to the destruction of the withdrawn product.

**Council Regulation (EC) 2200/96** maintains the priority given to price stability and to the ability to cope with serious market disruptions but **transfers to POs the exclusive right to intervene in the market**. POs may decide not to trade given quantities of product in given periods, taking into account the fact that market withdrawals should not, in any case, be considered as an alternative to market outlets.

With reference to **products eligible** for withdrawal indemnities, there has been an evolution during the regulatory period, with 9 products eligible before the CMO reform of 1996 and, as listed in Annex II of Council Regulation (EC) 2200/96, 16 after (13 fruit and 3 vegetable products).

**Council Regulation (EC) 2200/96** also introduces significant environmental objectives (protection of water quality, maintenance of biodiversity and upkeep of the countryside) by setting rules for the management of waste materials and destruction of products withdrawn from the market. The regulation lists possible

destinations, giving priority to free distribution and introducing the possibility of destruction through biodegradation or composting, though only in those cases in which all other options are unfeasible.

Another consequence of the CMO reform of 1996 concerns **Community Withdrawals Compensation (CWC)**. Under Council Regulation (EEC) 1035/72 CWC amounts differed, for the same product and year, among Member States due to its reference to national market prices. Council Regulation (EC) 2200/96 introduced a simplification of the calculation method, and a single amount valid throughout the Community (for all products CWC decreased over the period 1997-2002, and since then has been fixed, except for melons and watermelons, which have always been fixed). In addition to CWC, POs may allocate resources, for withdrawal purposes, from the Operational Fund for payment to producers of a “supplement” to CWC and for payment of “withdrawal compensation” for products not listed in Annex II of Council Regulation (EC) 2200/96. The maximum indemnity payable to producers (the sum of CWC and CWC supplement) is fixed by Council Regulation (EC) 2200/96.

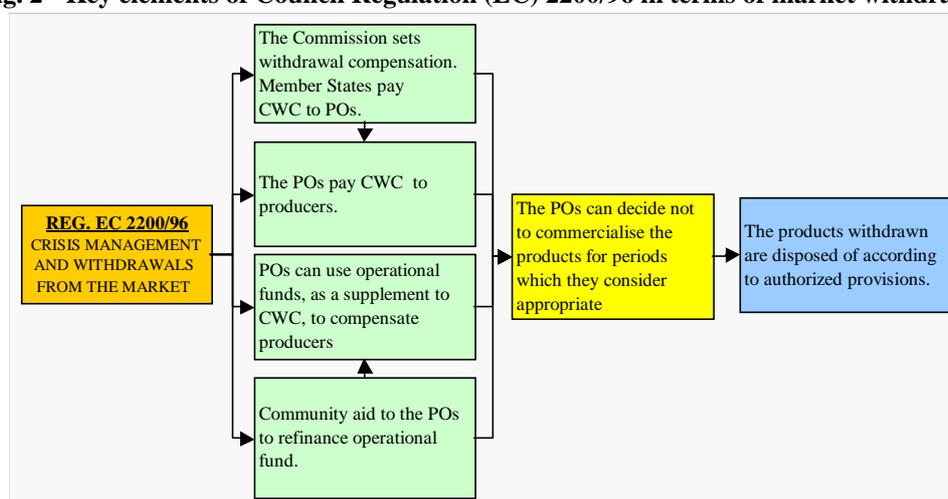
Moreover Council Regulation (EC) 2200/96 established that, so as not to alter the regular functioning of the market, withdrawal compensation would be granted only for a quantity up to a given “ceiling” determined, at PO level, as a percentage<sup>1</sup> of average output for the three preceding marketing years.

Council Regulation (EC) 2200/96 maintains the concept of “**economic area**” introduced by Council Regulation (EEC) 3284/83, which amended Council Regulation (EEC) 1035/72. POs (or APOs) operating in a given economic area and representing producers of a given product in that area may ask the Member State to make the rules they have adopted binding for producers based in the same economic area that do not belong to one of these organisations (“extension of rules”). In short, the regulation strengthens the role of POs in the management of market crises, making them, *de facto*, the organisation designated to manage the withdrawal of products from the market.

Council Regulation (EC) 2200/96 was implemented through two regulations: **Commission Regulation (EC) 659/97**<sup>2</sup>, subsequently **revoked by Commission Regulation (EC) 103/04**<sup>3</sup>, which underscores the relevance of environmental protection linked to withdrawal operations.

The framework for crisis management and withdrawals, as established by Council Regulation (EC) 2200/96, is summarised in the figure below.

**Fig. 2 - Key elements of Council Regulation (EC) 2200/96 in terms of market withdrawal**



Source: Council Regulation (EC) 2200/96

## 2. THE FRUIT AND VEGETABLE SECTOR

### 2.1. Main features of the F&V sector

<sup>1</sup> The percentage, which also differs by product, was set to decrease from 1997 to 2002 and was then fixed, with the exception of melons and watermelons, which were fixed at 10% during the entire period.

<sup>2</sup> Commission Regulation (EC) 659/97 of 16 April 1997.

<sup>3</sup> Commission Regulation (EC) 103/04 of 21 January 2004.

In the period 2003-2005 annual **world F&V production** averaged 1,373 million tonnes. In this context, the European Union was the second largest producer with 13% of global commercial production (behind Asia). EU was also the second largest exporter, accounting for 11.4% of the total market share, and the largest importer.

The fresh F&V sector is particularly relevant in **Mediterranean Member States**. Spain is the country where F&V production has the highest share of total agricultural output (30.3%), followed by Greece (28.4%), Cyprus (27.4%), Portugal (27.3%), Malta (26%), and Italy (25.1%). **Continental countries** where the sector is most relevant are: Belgium (16.3% of total agricultural production), Poland (16.9%), Hungary (13.5%), Netherlands (13.1%), and Slovenia (10.3%).

Community **vegetable production** (EU-25) rose from approximately 56 million tonnes in 1991 to around 61.5 million in 2004, with an average annual growth of 0.7%. Trends differ by Member State, although the three major producers, Italy, Spain and France, which account for over half of total production (55%), all posted a positive increase in annual average output. New Member States have a share of production exceeding 13% of the Community total; among these Poland is the undisputed leader, with 4.9 million tonnes. **Fruit production** has risen over the last decade in most EU Member States and, with the accession of the 10 New Member States in 2004, production reached 40 million tonnes. Analysing 2002 data, it can be seen that Mediterranean countries hold the largest share of production. The New Member States produce 10% of all Community fruit and, once again, Poland is the largest producer among these, with 3 million tonnes and 6.5% of total European production.

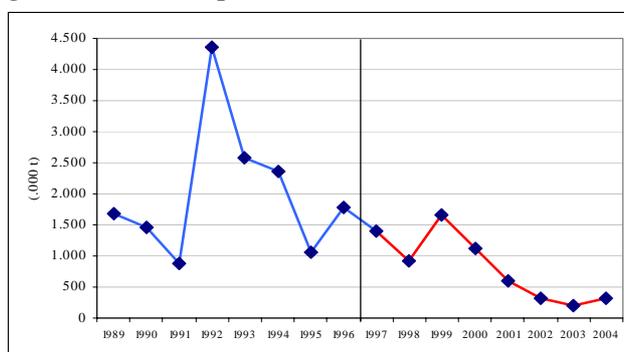
During the period 1999-2004, the analysis of **EU-15 extra trade of the 16 products eligible for CWC** highlights a regular deficit for **vegetable trade**, with year by year fluctuations of between -57 and -108 Mio EUR. With the accession of the 10 new Member States the negative balance amounted to -62 Mio EUR (2005). On the other hand, a positive balance of 1,480 Mio EUR was recorded for **fruit trade** in 2005.

The **EU-15 intra-trade value for the above mentioned 16 products** reached 8,315 Mio EUR in 2004, and is much higher than extra-EU15 trade. Fruit trade accounts for almost three times the value of vegetable trade.

## 2.2. Main features of the withdrawals scheme

Products within the scope of annex II of Council Regulation (EC) 2200/96 constitute the largest share of all withdrawals carried out. The quantities of products “outside the scope of annex II” are marginal in comparison to those listed in annex II. Analysing **withdrawal trends** since 1989, the decline of the phenomenon and the relatively stable fall since 1999 can be seen. In 1992 some 4,369,002 tonnes of products were withdrawn from the market, compared with only 315,818 tonnes in 2004, a fall of over 4 million tonnes. Withdrawal trends, compared with production trends, show no particular link between the two series. However, in 1992 and 1999, when the highest production levels were recorded, withdrawals rose significantly.

**Fig. 3 - Withdrawn quantities in EU-15 (tonnes, 1989-2004)**



Source: European Commission - DG AGRI

Looking at the two main withdrawal periods (pre-reform and post-reform), if we consider the average for withdrawn quantities in the first period, we notice that peaches were the **most withdrawn product**, followed by apples, oranges, nectarines, cauliflowers and tomatoes. With regard to the second period (1997-2004), the figures show a substantial decrease in withdrawals, while the major withdrawn products remained the same.

**Tab. 1 - Withdrawn quantities and average share by product in relation to total withdrawn products  
(tonnes, 1989-2004)**

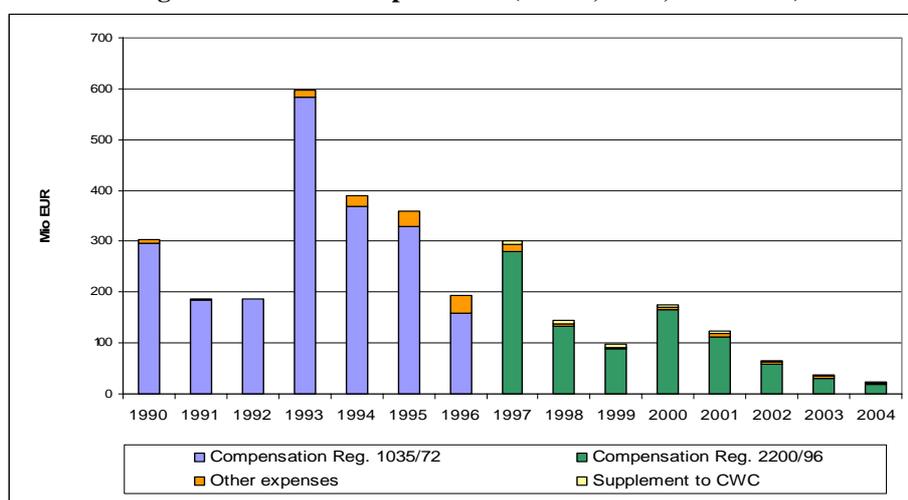
	Reg. 1035/72									Reg. 2200/96								
	1989	1990	1991	1992	1993	1994	1995	1996	Average	1997	1998	1999	2000	2001	2002	2003	2004	Average
Cauliflowers & broccoli	81.776	31.792	75.947	140.808	109.241	204.338	140.744	141.034	5,7%	172.181	116.696	184.042	43.424	29.379	9.479	19.364	20.257	9,1%
Tomatoes	46.427	135.655	60.272	252.697	60.563	59.431	73.143	166.272	5,3%	249.003	193.973	272.335	147.134	147.051	72.632	57.762	74.944	18,6%
Melons	0	0	0	0	0	0	0	0	0,0%	10.218	18.622	21.912	14.358	11.846	12.797	11.077	6.764	1,6%
Water melons	0	0	0	0	0	0	0	0	0,0%	6.380	14.326	7.782	10.442	5.814	11.096	7.701	9.465	1,1%
Egg-plants	1.938	86	553	148	385	461	5.332	4.244	0,1%	4.118	1.566	15.663	2.750	2.066	1.791	655	113	0,4%
Dessert apples	312.302	323.583	35.736	1.761.123	985.027	637.953	229.458	319.866	28,5%	401.998	274.151	209.347	257.775	75.174	36.198	31.641	26.069	20,1%
Dessert pears	23.232	28.286	3.267	196.712	42.614	88.380	50.083	176.571	3,8%	88.525	67.444	88.749	70.546	36.314	30.154	27.373	24.901	6,7%
Peaches	541.225	513.967	430.081	890.311	710.826	808.489	229.009	532.238	28,8%	92.902	24.909	318.648	257.490	108.118	42.649	14.478	70.692	14,3%
Apricots	13.528	37.253	1.004	20.946	85.666	54.940	3.218	20.272	1,5%	17.060	10.038	25.811	14.554	3.851	1.195	663	509	1,1%
Nectarines	130.236	129.609	83.075	340.974	159.699	208.543	71.110	247.177	8,5%	76.352	37.403	209.638	126.219	78.116	54.233	18.701	43.904	9,9%
Oranges	340.289	236.844	164.588	607.454	315.056	231.344	197.263	140.340	13,8%	187.638	77.650	201.139	86.352	49.127	19.783	4.860	17.623	9,9%
Mandarins	18.021	8.814	2.723	7.266	6.471	4.522	5.335	3.093	0,3%	1.651	959	3.360	1.267	708	63	0	0	0,1%
Sasumas	280	0	0	4.030	3.578	506	1.210	1.051	0,1%	4.064	3.543	2.633	6.576	4.794	3.443	1.854	2.161	0,4%
Clementines	13.749	792	1.713	58.164	21.412	40.999	52.718	6.648	1,2%	67.851	38.811	93.965	66.351	37.839	15.859	6.283	16.481	5,3%
Lemons	153.633	18.739	13.736	84.578	52.532	6.450	6.849	3.876	2,1%	20.238	36.098	5.294	7.493	5.515	3.103	2.408	1.773	1,3%
Table grapes	14	85	291	18.487	21.542	1.704	13.087		0,4%	932	60	81	66	120	21	27	161	0,0%

Source: based on data from European Commission - DG AGRI

During the first period **leading Member States in terms of withdrawal quantity shares** were Greece (42.2%), followed by Italy (21.9%), France (18.4%) and Spain (11.6%). Moreover, in the period following the 1996 CMO reform, there was a noticeable change in country shares: Spain took over at the top, with an average share of 44.9% of total withdrawals in the EU, while Greece underwent a strong decline, down to 14.8%. Shares for France and Italy remained stable. New Member States since 2004 have not used the withdrawals mechanism.

It should be pointed out that **Community expenditure for withdrawal indemnities** fell significantly over the period 1990-2004, from 597 Mio EUR in 1993 to only 23 Mio EUR in 2004<sup>4</sup>. Up until 1997 expenditure was broken down into “compensation for withdrawals and buying-in” (CWC) and “other expenses for free distribution operations.” From 1997 onwards, Reg. (EC) 2200/86 has added the “CWC supplement” paid to producers by POs and funded by Operational Funds. As the chart below shows, from 1997 to 2004 over 90% of withdrawal expenditure consisted of withdrawal indemnities, on a regular basis, while the other two spending categories varied from about 10% of the total in 1999 to about 21% in 2004.

**Fig. 4 - Withdrawal expenditure (EU-15, EUR, 1990-2004)**



Source: European Commission - DG AGRI

### 3. THE EVALUATION METHODOLOGY

The methodology applied in this study combines quantitative analysis via modelling and other quantitative approaches, with qualitative data collection and analysis.

The analysis under Theme 1 is based on an **economic model** used to identify the impact of withdrawals on

<sup>4</sup> Fig. 4 does not include figures for financial year 2005 due to a lack of data on buying-in expenses paid, which will be available only for the financial years 2006 and 2007.

price levels through an estimation of the elasticity of the relevant demand function. The model was fed by data on prices and corresponding traded quantities in the relative periods and for all relevant products, gathered in reference markets.

The tools employed in the analysis were applied to sets of data, mostly time series, collected from different sources. Depending on the themes of the evaluation, the **main information sources** used were: Eurostat, Comext and Comtrade, Farm Accountancy Data Network (FADN<sup>5</sup>), national agencies responsible for payments, national and regional statistical institutes, the European Commission and the Member States in question.

The analysis of producers' income (theme 2) and the environment (theme 3) are mainly based on the results of **12 regional case studies and one national case study covering two of the main permanent fruit crops** (citrus fruits and apples) and **two of the main annual vegetable crops** (tomatoes and cauliflowers). The results of these case studies also provided useful complementary information for answering other evaluation questions.

When the availability of official time series was limited, other statistical data were collected and used after verifying their representativeness. In other cases the analysis was supplemented by the results of **deep interviews** conducted with sector stakeholders.

## 4. EVALUATION RESULTS

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### 4.1. Stability of the market (Theme 1)

The first theme relates to the **effectiveness of the withdrawals mechanism** in achieving the objectives of:

- stabilising prices and guaranteeing the placement of products in the market,
- preventing withdrawals from being an alternative market outlet,
- not disrupting the regular functioning of the market,
- minimising the destruction of withdrawn products.

The goal of the first part of the theme is accordingly to verify whether or not withdrawals have contributed to **market stabilisation in the event of short term production surpluses**, while **not creating incentives that might lead to the formation of structural surpluses**. The comparison between the impact of the withdrawal mechanism as it existed before and after the implementation of Council Regulation (EC) 2200/96 and possible interference due to the presence of processing aids are also explored, given that processing can, for some products, be an alternative destination for fresh products in the event of production surpluses.

#### 4.1.1. Impact on the level and variability of prices and marketed quantities

To assess the extent of application of the withdrawal mechanism we analysed the ratio between withdrawn quantities and total production, and the ratio between actual withdrawn quantities and maximum allowed withdrawals. The results show that, on an aggregate basis, **withdrawals have been a non-negligible phenomenon for many products**, especially for cauliflowers, tomatoes, apricots, apples, peaches and nectarines during the period under review (marketing years 1991/92-2204/05). For all of these products except nectarines, the incidence fell significantly following the 1996 reform. In the three most recent seasons for which we have data, withdrawals have not exceeded 1.28% of total production except for nectarines or peaches. For these two products, nectarines and peaches, withdrawals have been used much less than in previous years. For all other products included in Annex II of Council Regulation (EC) 2002/96 and not listed here, data show that withdrawals have generally been a negligible phenomenon.

The comparison of actual withdrawn amounts with the maximum allowable quantity, calculated under the assumption that all production would be marketed through POs, shows that **existing ceilings have not**

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<sup>5</sup> The Farm Accountancy Data Network (FADN) is an instrument for evaluating the income of agricultural holdings and the impact of the Common Agricultural Policy.

constituted a **binding constraint**<sup>6</sup>, a result that is also confirmed, in part, by the fact that none of the interviewed POs declared the presence of the ceiling as being a problem.

To assess the extent of quantity stabilisation due to withdrawals, the standard deviation of the time series of harvested quantities was compared with the corresponding index of the *theoretically marketed quantity*, calculated as the difference between total harvested production and withdrawn quantity.<sup>7</sup> In this way, we aim to isolate the impact on quantity stabilisation due to withdrawals from possible other sources. If withdrawals are effected during production peaks, as might be expected when the mechanism is used to manage short term surplus crises, we would expect the series of marketed quantities to be less variable than the series of total harvested production. The results of this analysis show that, **in general, withdrawals have caused a drop in variability** and the extent of such a reduction has been greater in Mediterranean countries (France, Italy, Spain and Greece) and in the Netherlands. The largest falls in the standard deviation of the series of marketed quantities were recorded for apples (-32%), apricots (-31%) and peaches (-25%) in Greece, which seems to be the country where withdrawals have had the greater impact on quantity stabilisation. Product-wise, apples, pears, peaches and apricots are the products for which withdrawals seem to have had the greatest stabilisation effect. The fact that quantity stabilisation due to withdrawals is greater for permanent crops than for annual crops is not surprising; annual crops have a larger flexibility in production, which may eliminate part of the need to resort later to product withdrawals.

To identify the impact of withdrawals on price levels, we first analysed the time-series characteristics of prices for a subset of relevant products (apples, peaches, oranges, tomatoes and cauliflowers), in Italy, Spain, France and the Netherlands, and related them to the values of withdrawal incidence, as a percentage of harvested production.

In order to try and detect the possible effects of withdrawals on prices, we measured three indexes. First, to detect whether the occurrence of withdrawals has been systematically associated with low prices, we measured the **linear correlation index**<sup>8</sup> **between prices and withdrawals**. A negative correlation would indicate a systematic correspondence between low prices and high levels of withdrawals, thus indicating that withdrawals mostly occur in the months when prices are low. Next, under the assumption that withdrawals might affect the price with a lag, we also measured the **linear correlation index between prices and withdrawals lagged by one period**. A positive value for this index would reveal that withdrawals have had an impact on the following month's prices, causing them to become relatively high (something that would indicate a strong impact of withdrawals on prices). A more limited, yet measurable effect, can be detected by measuring the correlation between withdrawals and price *increases* rather than price *levels*. To check this we measured the correlation between withdrawals effected in one month and the price change from that month to the following month. In this way, we aimed to detect whether withdrawals caused a price increase, although not so intense as to make prices in the month following the withdrawals higher than average.

The values calculated for these indexes show that there is **compelling evidence that the mechanism was used when prices were lower** (the correlation between withdrawals and prices is negative for *all* commodities and *all* markets analysed). The result is not surprising, especially if one considers that up to 1996 withdrawals were authorised only when prices fell below a minimum level. More interestingly, there is also evidence that the occurrence of withdrawals **was unable to cause a reverse in the direction of price changes**. In fact, the correlation between withdrawals and price changes is close to zero for almost all

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<sup>6</sup> It should be noted, however, that precise ceiling amounts could not be calculated due to a lack of data on the actual share of total production marketed by POs for single products. For some products in some countries, where POs only cover a limited share of actual production, the constraint might have been binding.

<sup>7</sup> Notice that this latter quantity may not coincide with actually marketed amounts, given that other phenomena, such as processing, might take products away from the consumption market.

<sup>8</sup> The correlation index measures the extent to which the dynamics of two series of data are linked to each other. A positive correlation indicates a positive association between the variables (increasing values in one variable corresponds to increasing values in the other variable), while a negative correlation indicates a negative association between the variables (increasing values in one variable corresponds to decreasing values in the other variable). The index value varies from -1 to +1. An index of one in absolute values indicates perfect proportionality between the two series. A correlation value close to 0 indicates no association between the two variables. Since the formula for calculating the correlation coefficient standardizes the variables, changes in scale or units of measurement will not affect its value. For this reason, the correlation coefficient is often more useful than a graphical depiction in determining the strength of the association between two variables.

combinations of products and markets, **which means that, even after the withdrawal the price remained relatively low.** The analysis based on observed prices cannot go further.

To assess the *ex-post* impact of withdrawals on price variability, we required an estimate of the price that would have formed, in each month in which there were withdrawals, if the same quantity had been sold instead. To form such an estimate, a value for the price elasticity of the demand<sup>9</sup> for the market where the product is traded was needed. To estimate those values, we collected data on weekly prices and corresponding traded quantities for a number of products (apples, peaches, oranges, tomatoes and cauliflowers) in a number of reference wholesale markets across Europe. In particular, we obtained data from Chateaurenard in France, Madrid in Spain and Milan in Italy.

Based on these data, **we estimated, for each product and market, the implied price elasticity of demand,** whose values are summarised in the table below.<sup>10</sup>

**Tab. 2 - Implied elasticity for various products and markets (\*)**

<b>Product</b>	<b>Markets</b>	<b>Elasticity</b>	<b>% <math>\Delta p</math></b>
<b>Apples</b>	Madrid	-0,254	-3.94%
	Milan	-0.465	-2.15%
	Chateaurenard	-0.276	-3.62%
<b>Peaches</b>	Madrid	-0.47	-2.13%
	Milan	-0.251	-3.98%
	Chateaurenard	-0.376	-2.66%
<b>Oranges</b>	Madrid	-0.211	-4.74%
	Milan	<b>-1.265</b>	-0.79%
<b>Tomatoes</b>	Madrid	-0.131	-7.63%
	Milan	-0.11	-9.09%
	Chateaurenard	<b>-1.14</b>	-0.88%
<b>Cauliflowers</b>	Madrid	-0.273	-3.66%
	Milan	-0.204	-4.90%
	Chateaurenard	<b>-1.393</b>	-0.72%

(\*) The estimates are based on the assumption that the demand function is linear and elasticity is measured at the sample means. Last column reports the inverse of the price elasticity of demand, indicating the percentage change in price that would result from a one percent change in quantity traded.

**The values given indicate, for each product and market, the percentage change in price that would have been caused by a one percent change in the traded quantity.** Other than for oranges in Milan, and cauliflowers and tomatoes in Chateaurenard, in all other cases prices appears to have been, on average and over the period covered by the data, very responsive to the quantity supplied, and therefore **withdrawals would have had a revenue increasing effect.**

Given the historical data on actual withdrawals, we then calculated the percentage change in prices that would have occurred if the withdrawn quantity had been sold, and applied such predicted percentage changes in price to the monthly series of prices as recorded in the Agri-view database, thus obtaining a new series of what we term “**projected**” prices.

Finally, we compared the average and the variability of the projected price series with the corresponding indexes (i.e. the average and the variability) of the original price series. In this way we assessed the *maximum* possible effect, in terms of price level and variability that could be attributed to effected withdrawals, and that must be considered as an upper limit to the actual impact that can be attributed to withdrawals.

The results suggest that **withdrawals might have had a non-negligible effect on the time series properties of monthly prices for most products, although with sizeable differences across products and countries.** Under the maintained assumptions, **withdrawals may have prevented drops in mean prices ranging from**

<sup>9</sup> The price elasticity of demand measures the percentage change in the quantity in demand that would be caused by a one percent change in price. Under the assumption that it is the price that reacts to the quantity being supplied, as may be assumed for fresh fruit and vegetables, the inverse of the price elasticity of demand indicates the percentage change in price caused by a one percent change in the quantity supplied.

<sup>10</sup> We assumed a linear form for the demand function and used the price and a constant as the only explanatory variables.

**1.6%** (for tomatoes in France) **to about 46%** (for peaches in France<sup>11</sup>). The product whose price levels appear to have been least affected by withdrawals seems to be oranges, for which both in Italy and Spain the drop in mean price may have been of less than 6%.

In general, for all commodities and all countries, **the effect was much stronger in the period prior to the 1996 reform**, reflecting the higher incidence of withdrawals. Also, the result for the post-reform period is an average of early periods, from 1997 to 2000, when withdrawals were still significant, and later periods, from 2001 to 2004, when the incidence of withdrawals, and therefore their effects on prices, were much more limited. However, we can do no more than note it, given that further dividing the time span of the analysis into sub-periods would have made the time series analysis practically meaningless.

The only notable exception to the general pattern is represented by tomatoes in Spain, where the higher use of withdrawals in the post-reform period is reflected in the larger predicted impact on prices.

**In terms of price variability, the results are more heterogeneous.** Given our maintained assumptions, in the absence of withdrawals the standard deviation of monthly prices would have been larger than that recorded for apples and peaches in France and Italy (but not in Spain), for oranges, for tomatoes in France and in Italy and for cauliflowers in Spain. For all other combinations, our calculations show a potential *increase* in price variation due to withdrawals, which would mean that they did not act as a price stabilising device. In the post-reform period, however, the change in standard deviation is always (again, with the notable exception of tomatoes in Spain) as expected. This evidence might be consistent with the hypothesis that, after the reform, and apart from tomatoes in Spain, withdrawals were used only when truly needed to avoid temporary price falls, and with no significant structural effect on prices.

To measure the extent to which the presence of processing aid might have competed with product withdrawals, we began with the consideration that, if competition existed between the two mechanisms, this would be reflected in a negative correlation between any measures of respective intensity: when withdrawals are used, processing aid is not, and vice versa. We therefore calculated a simple linear correlation index between the quantity of product receiving processing aid and total withdrawn quantities per year, for all products eligible for processing aid, namely: oranges, lemons, satsumas, peaches and pears in countries where these products were actively withdrawn between 1993/94 and 2002/2003. The results are given in Tab. 3.

**Tab. 3 - Correlation between processing aids and withdrawals**

	<b>Oranges</b>	<b>Lemons</b>	<b>Satsumas</b>	<b>Peaches</b>	<b>Dessert pears</b>
GR	-0,232	<b>0,831</b>	n.a.	<b>0,621</b>	<b>0,666</b>
ES	-0,109	0,049	<b>0,578</b>	0,122	-0,073
IT	0,070	0,000	n.a.	<b>0,788</b>	0,210
FR	n.a.	n.a.	n.a.	<b>0,457</b>	<b>0,424</b>
PT	n.a.	n.a.	n.a.	n.a.	-0,218

*Values larger than 0.4 are highlighted in bold face.*

Source: based on data from European Commission - DG AGRI

<sup>11</sup> The high value for France is due to the high incidence of withdrawals in the period before the reform, which were often more than 20% of harvested production. Also, the result may be affected by the impossibility of correctly weighing monthly prices by the corresponding traded quantity. We assumed that the amount withdrawn was distributed in the same way as the amount produced, which leads to the result that, if the withdrawal had not been effected, each month the traded quantity would have been larger by a percentage equal to the percentage of total production withdrawn in the year. This may lead to an overestimate of the effect of withdrawals, especially on higher prices in the series, if withdrawals are concentrated in months where most of the production reaches the market and prices are lower. Unfortunately, without detailed data on marketed quantity by month, any assumption on the distribution of sales across the year would be arbitrary, and we were careful not to make it.

In most cases the index is positive, revealing that **the presence of processing aid did not completely substitute withdrawals**. Values larger than 0.4 reveal that withdrawals and processing aid were positively correlated in the cases of lemons, peaches and pears in Greece, satsumas in Spain, peaches in Italy and peaches and pears in France.

**These results cannot be considered sufficient to provide evidence leading to the conclusion that, in practice, the presence of processing aid actually conflicted with the withdrawal mechanism**, and are very much in line with the conclusions of other studies (see the “Evaluation of measures regarding fresh and processed peaches, nectarines and pears” and the “Evaluation of measures regarding citrus fruits”<sup>12</sup>) where it was shown that processing aid possibly reduced the amount of withdrawals, but could not be identified as the main cause for the reduced use of withdrawals.

#### 4.1.2. Possible creation of structural surpluses

To assess whether or not the presence of the withdrawal mechanism might create an incentive to increase production, we explored the extent to which the two potential conditions that could have represented an incentive towards an increase in production were actually in place in the periods of functioning of the withdrawal mechanism in the EU-25. The first might be due to the risk reducing effect of withdrawals, and the second to the presence of a price-like incentive due to compensation granted for the withdrawn quantity.

We do not consider the estimated effect on the average price as a direct source for the potential creation of surpluses mainly because of the evidence that, once production was realised withdrawals avoided price drops. This cannot be deemed a possible incentive to increase planned production unless the compensation granted for the withdrawn product exceeds costs incurred to dispose of the withdrawn product. In fact, if producers could effectively manage their supply to affect prices, they would do so by planning lower production in the first place (which is a better strategy than systematically producing more and then resorting to withdrawals, which would imply higher production costs).

It is only the presence of compensation that exceeds the cost of disposing of the product that might “artificially” make withdrawals effective in increasing revenues, and therefore create an incentive to plan production above the average demand. If coordination among producers were fully effective, such compensation would be entirely capitalised by producers as a rent. If coordination failed, it would at least be partly transferred to consumers through lower prices.<sup>13</sup> For these reasons, and to avoid possible confusion, we refer to a “price-like” (and not simply “price”) incentive, as one that may also derive from high compensation levels. If there were perfect coordination among producers, any compensation above disposal costs would result in an incentive to increase production. More likely, given the fact that POs do not control 100% of production, would be that compensation capable of inducing withdrawals that would be convenient for POs, and therefore such as to induce a supply response from producers that do not withdraw their products, should be sizeably higher than simply disposal costs, perhaps of the magnitude of market prices or production costs.

To address the first point, we used information collected through interviews *to evaluate the degree of risk aversion of producers*. Most of the PO representatives interviewed ranked the product of their interest among the first three in terms of price risk, although none stated that it was an important issue in determining the decision to produce that crop. One of the reasons why price risk, although present, is not crucial in determining whether or not to produce a given product can be related to the means that virtually all interviewees identified as the most effective in dealing with price risk, namely product and marketing channel diversification. By coupling these results with the presumed effect of withdrawals on the variability of prices, which has generally been shown to be limited in recent years, we can conclude that the current functioning of the **withdrawals mechanism cannot be deemed responsible for inducing a supply response** justified by risk considerations.

The second reason for which withdrawals might lead to structural surpluses is linked to the possibility of a *price-like incentive caused by the presence of compensation*. This incentive might derive from net

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<sup>12</sup> Agrosynergie, October 2006 ([http://ec.europa.eu/agriculture/eval/index\\_en.htm](http://ec.europa.eu/agriculture/eval/index_en.htm)).

<sup>13</sup> This might explain complaints by producers that the withdrawal mechanism is ineffective and therefore might lead to demand for even higher compensation, a phenomenon akin to the one that plagues subsidized crop insurance in the presence of adverse selection and moral hazards, where higher subsidies have been incapable of inducing greater farmer participation in crop insurance programs.

compensation, i.e. the difference between total compensation received and the cost of product disposal charged to producers. For the four main products and the regions we have considered, we analysed the incidence of CWC as a percentage of the recorded mean price for the years from 1997 onwards. The percentage ranges from a minimum of 7.09% (for tomatoes in France) to a maximum of 45.71% (for oranges in Spain). Even if we include the possible CWC supplement that can be paid by POs using their own Operational Funds, **the total compensation that producers might receive does not appear to be sufficient to induce an incentive comparable to that granted by the price.** In other words, the possibility that a structural surplus might be caused by the mere presence of the withdrawal mechanism, at least as regulated after the 1996 reform, is likely to be negligible in the current conditions for many fruit and vegetable products and regions. The possibility remains, nonetheless, especially for those sectors where production is highly coordinated, and where all producers would receive it, that the existence of positive compensation for withdrawn products, financed by public sources, might create an incentive for planning higher production.

#### 4.1.3. Disruption of the market of fresh and processed products

To assess whether or not products withdrawn from the market have been disposed of in such a way that they do not disrupt the market of fresh and processed products, we analysed the relevance of various destinations. Tab. 4 below shows the overall share of products disposed of according to all possible destinations, over the two periods 1989/93 and 1997/2004.

**Tab. 4 - Share of withdrawn products disposed of by destination**

	Overall share 1989/1993	Overall share 1997/2004
Free distribution	2.2%	4.6%
Non-food destinations	11.9%	0.0%
Animal feed	15.6%	15.0%
Direct distillation	14.8%	5.6%
Composting/biodegradation	55.3%	74.7%
Total	100.0%	100.0%

Source: based on data from European Commission - DG AGRI

In the period following the reform of 1996, destruction through composting and/or biodegradation has received the highest share among all possible destinations. If we couple this result with the overall limited incidence of withdrawals when compared to the overall size of the markets in question, we can conclude that, **in the post-reform period, the objective of not disrupting the regular functioning of fresh and processed products' markets has largely been achieved by the current regulation.**

#### 4.1.4. Destination of withdrawn products

To verify whether alternative destinations for withdrawn products were used solely to minimise the destruction of withdrawn products, and whether destinations other than destruction were encouraged, we analysed in turn: withdrawn volume trends and the share of each destination out of total withdrawn volumes (all products within the scope of Annex II and at EU 15 level); trends for volumes disposed of by “destruction”; the pre-conditions and factors influencing the use of various destinations. The results of the analysis show that:

- **the objective of minimising the destruction of withdrawn products has not been achieved:** the “destruction” destination was, before and after the 1996 reform, the most common destination for withdrawn products at EU 15 level (overall share of 55.4% of total withdrawn quantities before the reform, 74.7% after the reform). With regard to other destinations, the analysis showed that, **even if “free distribution” should preferably be used, only a marginal use is made of this destination. Therefore the objective of destination priorities has not been achieved.** The “animal feed destination” is, after the reform, the second most popular destination. This underlines the concrete feasibility of this destination when local conditions make it an appropriate choice.
- The analysis of pre-conditions for each destination (as provided for by Commission Regulation (EC) 659/97) showed that **some destinations are subject to a larger number of pre-conditions that influence the respective destination use.** Furthermore, it should be mentioned that **changes to measures adopted by the legislator to encourage the use of destinations as an alternative to destruction** (introduction in 1992 of “free distribution to third countries”, introduction of the reimbursement of transport, sorting and packaging costs for products withdrawn for free distribution) **did not have a determining influence in the use of this destination:** in the period before the reform (1989-

1994) the overall share of free distribution out of all withdrawn quantities was only 2.25%, and after the reform its overall share has only been 4.6% (even if in the last three seasons for which we have data the share of this destination has risen sizeably, reaching values of more than 8% in 2002/03 and 2004/05 and 11.00% in 2003/04).

Moreover, the **analysis of factors influencing the use of different destinations**, based on the information provided by sector operators, made it possible to draw further conclusions:

- POs search for the most flexible destination in terms of the ability to absorb large quantities of product. Consequently the choice of destination is **largely influenced by the specific characteristics of withdrawals**: seasonability and the unforeseeable nature of withdrawn quantities;
- the use of a destination depends mainly on its **ability to absorb large quantities of product**, as it allows the amortisation of costs in terms of logistics and resources (time and human resources);
- there is a **close relationship between geographic location** (in terms of being located in a geographical and economic system) of the PO and the destination for withdrawn products. When the location favours the implementation of a standard/cost efficient logistics system then biodegradation is less used than other possible destinations (mainly animal feed and distillation). We can state that destruction is used where there is no other adequate alternative to dispose of large quantities of product at a cost considered as being reasonable. The choice of one destination over another is closely related to the inadequacy of adapting other destinations to the needs of the PO;
- the **complexity of the administrative procedures and the number of checks** required by the regulatory framework for each destination remains the most important factor influencing the use made of various destinations. Even if the legislator has made a clear effort to encourage the use of some destinations, no significant results have been achieved mainly because the changes introduced to the regulatory framework did not lead to administrative simplification. Among destinations it appears that “free distribution” and “animal feed” destinations are the most affected by the complexity of procedures. Furthermore, the control system is considered as overly demanding for both POs and charitable organisations/livestock holdings, the burden of administrative complexity often prevents the use of these destinations from both the PO side and from the point of view of charitable organisations and livestock farmers.

#### 4.1.5. Compatibility with other relevant community policies

To verify whether alternative uses of products withdrawn from the market have been compatible with other relevant Community policies, we analysed trends for withdrawn products distributed to third countries. Despite the limited data available, we can conclude that the **quantities imported for free by the countries involved did not distort the internal markets of those countries**.

## 4.2. Income of producers (Theme 2)

This evaluation theme seeks to assess the **effects on producers’ incomes of withdrawals and of any other measure** adopted to cope with surplus crises.

### 4.2.1. Impact on producers’ income

To assess the impact on producers’ income levels, an analysis of actual and projected prices in the absence of withdrawals was performed for some products in the Spanish, French, Dutch and Italian markets, using the measurement of the possible impact of withdrawals on price, as obtained above (see Theme 1)<sup>14</sup>.

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<sup>14</sup> In this case, the analysis was based on annual prices obtained as the simple arithmetic mean of monthly prices. The weighted mean could not be calculated due to the lack of data relative to monthly volumes of marketed products. Assuming that lower prices correspond to higher traded quantities, the arithmetic mean we calculated would lead to an overestimate of the real annual average price.

Price variability in the absence and the presence of withdrawals was calculated using the coefficient of variation relative to the two sub-periods: before and after the 1996 reform. The calculation was carried out for the “de-trended” time series of monthly prices.

As for the analysis of the impact of withdrawals on the economic results of farms as a whole (i.e. considering all the various production activities carried out by farms, including crops to be withdrawn), two indexes were calculated: the *Farm Net Value Added* (FNVA) and the *Family Farm Income* (FFI) calculated at actual price and at projected price, both normalised with respect to the Total Utilised Area (TUA) and the Total Labour Input (AWU) to make the result comparable across farm types and regions.

The variability of the above-mentioned indexes in the absence and presence of withdrawals was measured using the coefficient of variation relative to the two sub-periods: before and after the 1996 reform. The calculation was carried out on the “de-trended” time series of the annual values in this case as well.

FADN data do not contain information on produced quantities that are then withdrawn by farms included in the sample. In order to estimate the effects that withdrawals have on farm incomes, we assumed that (national) market price variations attributable to withdrawals are transferred to actual prices received by farms of the FADN sample, regardless of whether or not withdrawals were actually effected by the farms. This will very likely lead to an overestimate of the effect of withdrawals on farms’ income to the extent that, without withdrawals, surveyed farms would have marketed a larger amount than that recorded.

*For these reasons, the - results at country and region levels should be evaluated with considerable caution* due to both the limitations of projected prices and the limitations of FADN samples’ representativeness. In particular, the major limitations of the effect of estimated withdrawals on prices is reflected in the analysis of incomes. The impact on prices as determined according to the adopted methodology must be considered as an upper limit for the real effects that withdrawals had in practice. Consequently, the actual impact of withdrawals on producers’ incomes is also likely to be lower than what the results of the analysis show.

So with all due caution due to the above-mentioned limitations, we can say that:

- It appears that a larger role was played by withdrawals in the period prior to the 1996 reform, albeit with some exceptions (most notably tomatoes in Spain and cauliflowers in Italy) compared to the post-reform period.
- In most cases, it is possible that withdrawals might have contributed to a reduction in the fluctuation of prices around the trend line, although it is worth noting that overall price variability has remained particularly high for such products as tomatoes in Spain and the Netherlands, peaches in Spain and cauliflowers in Italy and France.
- From this analysis, no general effect on the whole set of products can be linked uniquely to the 1996 reform.

As a general conclusion, in terms of price variability we may say that the withdrawal system appears to have played a positive role, especially before the 1996 reform. With regard to the impact of withdrawals on producers’ income, **the results of the analysed cases did not allow us to draw uniform conclusions**. Significant differences were found between the two analysed periods (pre- and post-reform) and across products and regions. Taking into account the limitations of the analysis, the following table gives a summary of results<sup>15</sup>.

**Tab. 5 - Level of impact of withdrawals on farm income**

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<sup>15</sup> The summary reported in the table is “qualitative” in nature, and should therefore be viewed with caution.

Product / Area	pre reform	post reform
<b>Tomatoes</b>		
NE national level	L	no W
ES MURCIA	L	H
IT PUGLIA	L	L
<b>Cauliflowers</b>		
FR BRETAGNE	H	L
<b>Oranges</b>		
IT nat. level and Calabria	L	L
ES nat. level and Com. Valenciana	H	L
<b>Apples</b>		
IT TRENTO	L	no W
ES CATALUÑA	H	H
FR national level	H	L

**Legend:**

*H = High impact within the period*

*L = Low impact within the period*

*no W = no withdrawals within the period*

As Tab. 5 shows, it appears that the impact of withdrawals on incomes (**was generally higher in the pre-reform period when** compared with the post-reform period (which is not surprising taking into account the higher incidence of withdrawals in the pre-reform period) This seems particularly evident in Bretagne for cauliflowers, in Spain for oranges and in France and Cataluña for apples. In the post-reform period the impact seems to be larger than before in Murcia for tomatoes and, persistently, in Cataluña for apples. However, **the variability of income might have been influenced by other factors**, possibly linked to the production of other crops.

In conclusion, we may say that, due to the limitations of the analysis and the non-homogenous results, no ultimate judgement on the effectiveness of withdrawals in terms of income stabilisation can be drawn.

#### 4.2.2. Other measures adopted to cope with short-term surplus crises

In order to assess whether any other measures (if adopted) aimed at coping with short-term surplus crises had any impact on producers' income, a specific survey on these measures was conducted through interviews at different levels (national and regional public administrations, POs), involving a total of 13 case studies. The survey revealed that a **wide array of actions were used as alternatives or additions to product withdrawals**. Those actions were always part of general strategies involving the synergistic and/or complementary use of various measures, aimed, on the one hand, at **sustaining intermediate and final demand** (both as a whole and at the individual farm level) and, on the other, at **reducing supply pressure** in the European Union market by exploring alternative outlets.

Adopted measures varied among the different regions and for different products. Apples in Trentino, in the French regions and in Cataluña, and citrus fruit in the Comunidad Valenciana and Calabria were the sectors/regions where alternative/complementary measures were used most frequently, as opposed to the cauliflower sector in La Rioja and tomatoes in Murcia and Puglia, where less use was made of initiatives other than withdrawals.

Improved marketing was the most frequently adopted measure aimed at increasing demand, and the diversification of varieties was the most frequently used strategy to reduce supply pressure on specific production segments, those most vulnerable to recurring market crises.

Since POs have implemented a significant part of all the measures analysed, it is reasonable to assume that most of the benefits have accrued to the members of POs rather than to producers who do not belong to these organisations. Generally speaking, **the adopted measures are likely to have had a positive effect on producers' income. However, lack of quantitative information makes it impossible to express a quantitative evaluation of their impact.**

#### 4.3. Environment (Theme 3)

This evaluation theme seeks to assess the **extent to which the regulatory framework is able to prevent potential environmental damage** caused by the disposal of products withdrawn from the market, by

verifying whether regulatory frameworks at Community, national and regional levels exist and how they perform.

Council Regulation (EC) 2200/96, in force since 01/01/1997, establishes that Member States define a **national framework** for drawing up general conditions relating to disposal methods that respect the environment. Furthermore, Council Regulation (EC) 2200/96 limits the possibility for Member States to destroy withdrawn products **solely through biodegradation or composting processes**, and only allowing it **when no other destination is possible**.

The quantitative analysis showed, in absolute terms, **a strong fall in the quantity of destroyed products in the post-reform period** (-82% for marketing year 2004/05 vis-à-vis 1997/98). However **the share of the quantities destroyed** out of all withdrawn **products remained rather high** (in 2004/05 accounting for over 65% of all withdrawn products). This leads us to conclude that **the Community regulation's aim of "avoiding the destruction of withdrawn products" was not achieved**.

**Community regulations do not provide specific criteria, parameters or indicators** to ensure that environmental damage is not caused by the biodegradation and composting of F&V products withdrawn from the market. Moreover, the survey we conducted with European Commission offices revealed that **there are no available evaluations or assessments on biodegradation and composting processes on which to base a comparative analysis** of processes defined by Member States. Thus, the analysis is based on the existence and appropriateness of specific national regulations, operating manuals and procedures concerning the destruction of withdrawn F&V products.

Analysis of the national frameworks in force in the period 1997-2005 showed that the **"definition by Member States of an appropriate national framework to prevent environmental damage during operations to dispose of withdrawn products" has not been completed at a European level**. Until 2005, the European Commission deemed only the frameworks submitted by France, Finland and Hungary to be adequate. The reasons why no approved framework has been recorded for other countries range from the non-implementation of withdrawal operations to the application of regulations already in force. Furthermore, declining trends for the amounts of withdrawn and destroyed products may in some way have influenced the decision not to consider the preparation of specific rules as a necessity.

Combining the results of the analysis on the "appropriateness of the national framework" by Member States with the relevance of quantities of product destroyed by each of them in the period 1997-2005, it emerged that only in France have specific provisions and regulations been issued to govern the possible environmental damage of withdrawn F&V products. On the other hand, for Italy, Germany, United Kingdom, Greece and Portugal, all of which have resorted to product destruction in large quantities, national frameworks were deemed to be inappropriate.

The legislative and administrative survey conducted in the four Member States (France, Italy, Spain and the Netherlands) to which the case studies refer revealed that:

- Among disposal methods that lead to the destruction of products, **composting was practically non-existent** in the period 1997-2005, while **biodegradation** in France (and in Italy since 2003) and **"degradation via incineration or dumping at authorised disposal sites"** (in Spain until 2005 and Italy until 2002), **were the only practices used and regulated**.
- Since Community regulations do not provide specific criteria or parameters in order to identify and regulate biodegradation and composting processes, **different legislative approaches have been adopted in different Member States**. While France has provided specific provisions for biodegradation and composting of withdrawn products, Italy and Spain have considered themselves to be in compliance with Council Regulation (EC) 2200/96, deeming the destruction at authorised disposal sites by means of dumping and incineration adequate for environmental protection purposes.
- During the entire period (1997-2005) **specific operating manuals and procedures** to achieve the aims set out in Art. 25 of Council Regulation (EC) 2200/96 (environmental protection in case of disposal of F&V products withdrawn) were:
  - in force and specified for biodegradation and composting processes in France and for degradation, via incineration or dumping at authorised disposal sites, in Spain and Italy,
  - not specified for biodegradation in Italy and in the Netherlands,
  - not specified for composting in Spain.

Combining all the above mentioned results we can conclude that **the different regulatory approaches adopted by Member States have resulted in national provisions that could be insufficient** to ensure that environmental damage is not caused by the disposal of F&V products withdrawn from the market.

On the other hand, the **control scheme and checks** required by Community provisions **for withdrawal and disposal operations appear to be appropriate**. This picture emerges from national procedures analysed for the Member States included in the case studies and from the substantial lack of criticism reported by European Commission audits conducted in several areas.

These findings, as a whole, lead us to conclude that **in the observed period (1997-2005) at Community level, the effectiveness of the Community regulation's aim of "preventing environmental damage caused by the disposal of withdrawn products" was only partially achieved**.

It should also be pointed out that **since 2005**, following the implementation of Commission Regulation (EC) 103/04, Member States involved in the case studies, except for the Netherlands, drafted **new operating manuals** in which procedures for withdrawal management, **disposal operations and checks have been presented in much greater detail**. The trend for coming years is therefore towards the improvement of disposal practices, paying special attention to environmental protection.

#### **4.4. Management and efficiency (Theme 4)**

The final theme of the evaluation relates to the **efficiency of the withdrawal system as a policy mechanism for short-term surplus crisis management**.

The fundamental questions to answer have been that of whether or not:

- the costs associated with maintaining the system of withdrawals are both justified and in line with those of measures adopted in other sectors for similar purposes, and
- there are possible alternative measures that might serve the purpose of assisting fruit and vegetable producers in managing short term crises.

##### **4.4.1. Expenditure efficiency**

In view of the lack of detailed data needed to perform a full analysis of efficiency, and therefore to answer the first question, the results reflect only a partial analysis of efficiency, and the evaluation judgement has been formulated as a synthesis of specific and parallel analyses dealing with the comparison between: withdrawals budgetary expenditure and results achieved in terms of reducing price and income variability (efficiency); withdrawals budgetary expenditure and the cost of distillation in the Wine CMO as well as overall F&V CMO budgetary expenditure (coherence).

The analysis showed that **the level of withdrawals budgetary expenditure has been extremely variable over the past 15 years, with a clearly identifiable long-term decline** in withdrawal expenditure over the period 1993-2004. This can be related to some factors that may have contributed to reducing the interest of producers in adopting this tool, such as:

- the reduction in CWC for most products eligible for withdrawals from financial year 1997 onwards, with the consequent reduction in incentives for using withdrawals as a destination for excess supply; consequently, the importance of alternative channels other than withdrawals (e.g. exports, production of processed F&V products) has increased;
- the introduction of "ceilings" to the quantity allowed for withdrawals by Council Regulation (EC) 2200/96;
- the increased administrative burden as a consequence of the coming into force of Commission Regulations (EC) 659/97 and 398/00.

Furthermore, **the ratio between withdrawal budgetary expenditure and the value of withdrawn products fell over the entire period considered (1993-2004) and especially after 1996**. However, **we cannot conclude that the overall level of income protection against market variability**, as granted by withdrawals, **has fallen**. The tendency remains that of a less intense use of the instrument, more so in the period after the CMO reform. It could also be that the market for fresh products has become more profitable, and the withdrawal option has been exercised only for marginal quantities of products. Despite a considerable decrease in amounts withdrawn after the 1996 CMO reform, **no disruptive effects on market and incomes appear to have been recorded**.

Together with the declining importance of withdrawals, **the efficiency of withdrawals budgetary expenditure on reducing price and income variability also appears to have changed over the years.** Although withdrawals seemed to be efficient in reducing price and income variability for the few products examined (peaches, citrus, apples, cauliflowers and broccoli) **such efficiency seems to have declined** (higher costs for the same reduction in price variability) **after the CMO reform, although the evidence is not strong enough to allow us to draw a general conclusion.** *These results should be considered with caution: the analysis of efficiency does not provide a complete picture of efficiency, since only budgetary expenditures (and not all the costs of withdrawals) have been taken into account here. Also, it should be considered that due to the limits of the present analysis in terms of the dataset used and information obtained from the price and income analysis, the results in terms of the achievement of price and income stabilisation goals should be considered as limited and partial.* Therefore, in view of these limitations and results, **it has been difficult to draw firm conclusions on the efficiency – even partial – of withdrawals.**

#### 4.4.2. Financial coherence

As far as budgetary costs are concerned, **withdrawals seem to be in line with the costs of similar measures adopted within the Common Agricultural Policy (CAP) framework,** in particular with the average budgetary cost of wine distillation (considered as similar to withdrawals in terms of its goals and tools) and with the budgetary costs of processing aids for peaches, pears and citrus. *This conclusion is also valid for comparisons made and cannot be deemed as an indication of absolute cost efficiency.*

#### 4.4.3. Management complexity

The evaluation of the administrative complexity of withdrawals was carried out through interviews with expert witnesses involved in the management of withdrawal operations. A major finding is that **withdrawals have not benefited from administrative simplification,** which was one of the goals of the CMO reform. The general received perception is that withdrawals are still a very costly tool to use (in terms of administrative burden). The analysis of administrative schemes confirmed this perception: due to the long and complex administrative procedure, the destruction of products is often preferred to other destinations (free distribution or animal feed). Also, **withdrawal management costs have increasingly been transferred to POs and to regional administrations.**

Finally, it is important to stress that the **administrative burden has an impact on the effectiveness and efficiency of the withdrawal itself.** Indeed, the reason why a PO might want to resort to withdrawals is the need to rapidly contain the offer. When the necessary authorisations entail a considerable bureaucratic burden and an excessive amount of time spent completing administrative procedures, there can be waiting times of over a week in order to withdraw that product, by which time, most of the reasons for the withdrawal are obsolete.

#### 4.4.4. Alternative measures to cope with short-term surplus crises

The second evaluation question included in this theme asked for an evaluation of any other measures that might be introduced to cope with short term surplus crises in the fresh F&V sector.

To answer this question we analysed which actions have actually been taken in the past by F&V producers and their organisations, and which other policy tools could be used, focusing in particular on those that have recently been suggested in agricultural policy debates on risk management in agriculture.

In our analysis we noted that **the 1996 F&V CMO reform,** reducing the levels of compensation granted and eliminating the automatic link between market prices and withdrawals, **has considerably reduced their negative effects,** which were due to the fact that, until then, the mechanism had acted as a kind of free “price insurance” mechanism. The real effectiveness of such a mechanism can be strongly questioned by the observation that, since it has been significantly reformed, and the use of withdrawals has dramatically dropped, no evident increase in overall market instability has resulted.

**Empirical analysis does not support the conclusion that such a result is attributable only to the improved effectiveness of the new withdrawal system.** It may also be due to the effects of other changes that have occurred within the F&V marketing chain, such as the growing relevance of Organised Retail in the sales of F&V in EU countries (which has led to a wider use of stricter contractual agreements between producers and buyers, thus reducing the relevance of traditional sales channels) and other activities carried out by POs.

Withdrawals cannot and should not be considered a “normal” marketing mechanism, even for products such as F&V that cannot easily be stored. Furthermore, the analysis showed that the coherence of the current withdrawal scheme in relation to the reformed CAP is rather poor, given that it does not achieve the objectives of stronger market orientation and high environmental protection. The fundamental point is that, if producers could do it, it would be already in their best interests to regulate the quantity being sold according to market conditions, and therefore there would be no need for further incentives such as those provided by CWC. The main reason why producers may fail to optimally control the marketed quantity may be related to information-based or other problems that undermine the possibility of coordination. When producers cannot perfectly interact, withdrawals are likely to be ineffective, given the presence of an incentive for any single producer to sell his or her entire production when other producers withdraw some of theirs. Although the creation of a cartel would violate competition policy rules, coordination conducted by POs would be consistent with such rules provided that their activity is aimed at, and regulated in a way to, achieving the goals of the Common agricultural policy.

The role of the producer organisation can be very positive in terms of price risk management. In our survey, we found, indeed, that **some POs have already effectively integrated risk-reducing activities** in their operations, such as:

- forward contracting with large retail chains, especially if the delivery price is fixed in advance by contract;
- shortening of the retail chain by contracting directly with retailers, in this way reducing marketing margins, with positive effects on price variability;
- planning members’ activities with the aim of regularly supplying the product over the whole marketing season;
- providing storage facilities.

**These results have certainly been facilitated by the 1996 reform**, which contributed to creating incentives for PO operations by supporting their role in organising EU F&V supply.

Looking again at the risk management activities of POs, we considered the possible use of financial instruments and insurance. In this respect, from the deep interviews we conducted, two aspects emerged:

- first, **in the few cases in which POs managed short term crises through the use of financial tools, the role of the government has been rather limited**. In the past, the French government had supported precautionary saving funds, but intervention ended because it was deemed not compliant with EU competition rules;
- second, **commercial insurance is never used as a tool to manage surplus crises**, thus suggesting that there are reasons why such an instrument is not effective, as discussed below.

In exploring the extent to which the role played by withdrawals could be substituted by other instruments, especially if these other instruments are implemented by POs, we also have to consider that, while a withdrawal would contribute to price increases not only for PO members but also for other producers, the use of other risk management activities by POs can only benefit their members. Given the current state of the EU F&V industry, in which the spread of POs, as well as their size, is rather limited (European Commission, 2006), it could mean that **a large share of producers would not have access to the benefits of instruments adopted by POs**.

For these reasons it is still legitimate to ask whether there are other tools, perhaps more general and not necessarily linked to the operation of POs to manage surpluses crises. Among policy tools that have been considered recently we analysed the potential pros and cons of: public support for income insurance and the promotion of mutual funds among farmers to manage risk.

**Income insurance does not appear to be a viable tool to stabilise F&V producers’ income**. In addition to the usual problems of insurance, linked to moral hazard and adverse selection, income insurance for F&V producers would present another problem. The price component of income risk would be a typical systemic risk, and for F&V, given the nature of such products, which cannot easily be stored and for which it is more difficult to define standards on which to write contracts, there would be no mechanism, such as an active futures market, to effectively hedge it.

Other possible risk management tools, such as those based on the use of **weather derivatives**, might have a **better chance** for those products whose production is closely related to specific weather indexes, such as cauliflowers, **although their use**, particularly in the EU, **is still limited**.

**Mutual funds seem to be more promising.** A mutual fund will have the same risk sharing potential of insurance, but with fewer problems. They are based on trust and shared knowledge among their members, in this way they would eliminate the problems of adverse selection. Moral hazard too would be reduced because of the mutual commitment that binds the group of members.

However, the use of mutual funds to manage short-term crises, such as those common in the F&V sector, could be limited by the systemic nature of risks that, especially in the early days of the funds' functioning, could hinder the ability to cope with large and simultaneous producer income losses. The risk management capability of mutual funds can be increased by the combined use of other financial instruments which might allow the transfer of a share of the entire fund's risk exposure to other agents. This could be achieved either by insurance or by securitisation. The main foreseeable obstacle to such an activity is the dimension that funds would have to reach in order to gain access to the professional skills needed to operate in financial markets.

The most attractive feature is perhaps that the management of short-term income crises through mutual funds would be possible, within a possible evolution of the current framework, by **broadening the scope of POs to include the management of such financial activities as well as the establishment of precautionary saving funds**.

Combining all these findings, our conclusion is that **potential new measures, which might be introduced to improve short term crisis management, could be based on actions designed to:**

- **strengthen the role of POs** within the EU F&V market;
- **broaden the role of POs**, both in pooling the risks faced by their members and in contracting with firms with larger market power;
- **broaden the function of POs and the scope of Operational Funds to formally include risk management features, which could be based on the use of insurance and financial markets.**

## 5. "CONCLUSIONS AND RECOMMENDATIONS"

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### 5.1 Conclusions

To summarise, bearing in mind the limitations of the analysis and with due caution in interpreting findings, the main conclusions we reach are as follows:

- In terms of **price stabilisation**, the mechanism can be deemed partially effective. Withdrawals may have contributed to reducing price variability, especially in the post reform period, for most products subject to withdrawals. Some evidence of the opposite effect (that is, increased price variability) in the pre-reform period might be the result of the fact that withdrawals might have responded to the incentive provided by excessive compensation levels rather than simply the desire to avoid excessive price drops.
- None of the two possible **sources of incentives for the creation of structural surpluses**, namely the risk-reducing effect of withdrawals and the price-like incentive determined by the presence of CWC, is likely to have been relevant in the post-reform period. Therefore the withdrawal mechanism, as regulated since 1996, cannot be deemed responsible for the creation of structural surpluses, and withdrawals do not constitute an **alternative outlet to the market** in current conditions for most products, where POs control less than 100% of production.
- Since the 1996 reform, with the exceptions of tomatoes in Spain and of nectarines, the amount of fruit and vegetables being withdrawn has been negligible in all producing countries, and therefore not such as to **disrupt the regular functioning of the market**, partly because most of the withdrawn products have been destroyed. However, this clearly means that **the goal of minimising the destruction** of withdrawn products has not been achieved.
- In terms of **producer income stabilisation**, withdrawals appeared to make a larger impact on incomes prior to 1996 when compared with the post-reform period. However, due to the limitations of the

analysis and non-homogenous results, no ultimate judgement on the effectiveness of withdrawals in terms of income stabilisation can be drawn.

- **Measures other than withdrawals** have been used by POs and are likely to have had positive effects on income stability, although, due to a lack of quantitative information, no precise assessment of their actual impact can be made.
- In the observed period (1997-2005) at Community level, the **effectiveness of the Community regulation’s aim of “preventing environmental damage caused by the disposal of withdrawn products”** was only partially achieved. In particular, our analysis revealed that:
  - **Community regulations** do not provide specific criteria, parameters or indicators to ensure environmental protection for the two destruction practices allowed: **biodegradation and composting**.
  - **Different regulatory approaches** have resulted in national provisions that could be insufficient to ensure that environmental damage is not caused by the disposal of withdrawn F&V products. On the other hand, the **control scheme and checks** required by Community provisions for withdrawal and disposal operations appear to be appropriate.
- **EC budgetary expenses** for the withdrawal system, in the way it is currently administered, are in line with those of similar measures adopted within the CAP.
- The goal of **administrative simplification** has not been achieved. Withdrawals are still perceived as a burdensome tool.
- The 1996 F&V CMO reform, by reducing CWC and eliminating the automatic link between market prices and withdrawals, has considerably reduced the **negative effects of such insurance-like mechanisms** without increasing overall market instability. Empirical analysis, however, does not make it possible to conclude that the latter result is attributable only to the improved effectiveness of the new withdrawal system. Moreover the 1996 reform contributed to creating **incentives to PO operations by supporting their role in organising EU F&V supply**. However the analysis showed that the **coherence of the current withdrawal scheme in relation to the reformed CAP** is rather poor, because it fails to address the objectives of stronger market orientation and high environmental protection.
- **Potential new measures**, which might be introduced to improve short term crisis management, should be based on strengthening and broadening the role of POs within the EU F&V market and, at the same time, broadening the scope of Operational Funds to formally include risk management features.

## 5.2 Recommendations

In addition to providing the answers to specific evaluation questions, as stated in the previous paragraph, the analysis conducted led us to formulate recommendations aimed at making possible improvements to the short-term surplus crisis management framework in the EU F&V sector.

As a caveat, it should be borne in mind that these recommendations do not take into account the proposals for reform of the F&V CMO currently being discussed at various levels, by the Commission and other bodies, and therefore are based on the *status quo* that we have found and considered throughout the report.

With this premise, our main **recommendations for possible ways of improving the current system based on withdrawals** are as follows:

1. This evaluation has highlighted a series of difficulties faced by both POs and charitable organisations/livestock farms regarding the practical use of “free distribution” and “animal feed”, which are also potentially more environmentally friendly. This leads us to make the following recommendations:
  - to improve the technical feasibility of the “free distribution” destination.
  - as an alternative or in addition, to promote the development of a more efficient information system in order to facilitate relations between POs and charitable organisations;
  - to simplify control procedures that directly involve charitable organisations and livestock farms receiving withdrawn products.
2. The analysis emphasised that only 3 of the 25 EU MS drafted “*national frameworks to prevent environmental damage during operations to dispose of withdrawn products*” that were deemed to be

satisfactory by the Commission. Therefore we recommend that more intensive actions be taken by the Commission to ensure that all Member States conform to an agreed set of rules.

Moreover, the analysis showed that, since Community regulations do not provide specific criteria or parameters to identify and regulate biodegradation and composting processes, different legislative approaches have been adopted by Member States, resulting in national provisions that might not be sufficient to ensure that environmental damage is not caused by the disposal of F&V products withdrawn from the market. Thus we recommend that the development of the Community's regulatory framework provides: a specific and technical definition of biodegradation and composting processes; criteria and parameters to be adopted for environmental protection during the disposal of withdrawn products.

3. Despite the existence of a significant monitoring and control system, we encountered serious difficulties in gathering some relevant data, and have some concern as to their effective usefulness for analyses such as this one. The main problem refers to price data. The current system requires that Member States periodically communicate to the Commission an average monthly price by product. In order to have more useful statistical data, it would be advisable for data on prices to be accompanied by data on volumes traded, in order to be able to weigh the price with traded quantities when forming averages.

Other problems concerned the gathering of data on both the quantity and destination of withdrawn products that are listed as being disposed of by “free distribution to third countries”. Although this related to very small quantities, the gathering of relative data has been extremely difficult if not impossible. Moreover, data relating to the quantity disposed of by biodegradation and composting are only available as rough aggregates. We thus recommend that actions be taken to improve the current monitoring system, and that data on the actual destinations of withdrawn amounts be made available at a more detailed level.

The results of Theme 4 show that POs are the best actors to manage possible instruments and measures to cope with short-term crises. Therefore, **with a broader perspective, in order to improve the management of short-term surplus crises** in the fruit and vegetables sector, we also suggest an **evolution of the current framework, strengthening and broadening the role of POs in managing the risks faced by their members**. Useful actions could include:

1. strengthening the role of POs within the EU F&V market, since many tasks already carried out (in particular, the planning of members' deliveries, negotiating with large retail chains) also have a price-stabilising effect for their members, avoiding short term crises.
2. broadening the scope of PO operations and of Operational Funds to formally include risk management features.
3. publicly funded compensation for withdrawals, if any, should be limited to covering the costs incurred for disposing of the withdrawn product in environmentally friendly and socially acceptable ways.