

LMC INTERNATIONAL

**EVALUATION OF MEASURES RELATING
TO THE DURUM WHEAT SECTOR WITHIN
THE CONTEXT OF THE COMMON
AGRICULTURAL POLICY**

Final

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Executive Summary

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Executive Summary

1. Introduction

1.1 Background

This evaluation examines the impact of measures of the Common Agricultural Policy (CAP) applied in the durum wheat sector after the 2003 reform. Its focus is Council Regulation (EC) No 1782/2003 and all subsequent measures related to the durum wheat sector. The regulation was implemented in the period 2004-2006 and the evaluation deals with the period from 2005/06 to 2007/08. The overview of the sector covers the period 2000/01 to 2007/08.

1.2 Methodology

A key component of the methodology is the calculation of production costs and gross margins. These are then used as a basis for calculating simple supply elasticities to analyse the effect of a change in gross margin on the area under durum wheat following the regime change. We also use of questionnaire evidence to gain both farmers' and processors' responses to the change in regime.

Case studies were used to provide a greater understanding of the effect of the regime change on specific Member States. These are provided for France, Greece, Italy and Spain. Specific regions for field research were: Centre (France); Central Macedonia (Greece); Puglia (Italy); and Andalucia (Spain). In these regions, a questionnaire was conducted with farmers and interviews held with market participants. A questionnaire was also used with processors. In this case, respondents were not restricted to the case study area as often the main processors were outside of this region.

The questionnaires were conducted with 96 farmers in the case study regions. These questionnaires give valuable information on the sector. However, they are not supposed to be statistically representative of the sector but they do give an indication of trends in the durum wheat producing areas.

The major data sources analysed for this study are: (a) Eurostat and official data from governments and industry associations; (b) FADN data for farms specialising in durum wheat and the major competing crops; (c) a questionnaire undertaken of a sample of producers; and (d) a questionnaire among a sample of processors.

A limitation of the use of FADN data is that the sample is only available to 2006. The questionnaire responses and national sources of cost and price data were used to create data for 2007 and 2008. The FADN data are also limited to the extent that the sample of farms changes each year. Where possible we have made use of cohorts of data. However, this limits the number of farms and a sample of sufficient size is only available in Italy and Greece.

2. Intervention measures

2.1 Measures affecting the durum wheat market

The 2003 reform sought to increase the market orientation of the CAP and increase competitiveness in the sector. Its main aims being to:

- allow farmers freedom to produce to market demand;
- promote environmentally and economically sustainable farming;
- simplify CAP application for farmers and administrators;
- strengthen the EU's position in WTO agricultural trade negotiations.

For durum wheat a further specific objective of the support was *the maintenance of the role of durum wheat production in traditional production areas while strengthening the granting of the aid to durum wheat respecting certain minimum quality requirements.*

The reform established common rules for direct support schemes under the CAP. It introduced a Single Payment Scheme (SPS) in the EU-15. The SPS took direct aids from a number of sectors and placed them into a single farm payment. Under the reform:

- Area payments on cereals, the durum wheat supplement for traditional areas and the durum wheat special aid for non-traditional areas were included within the SPS and decoupled from production although the individual Member States (MS) could opt to retain, outside of the SPS, up to 25% of their coupled payments on cereals, oilseeds and protein crops (COP) (as France and Spain did), or 40% of the durum wheat supplement (no country adopted this option).
- In order to improve the quality of durum wheat, a specific quality premium of €40 per hectare in traditional areas was introduced, subject to the use of a certain quantity of certified seed varieties and a maximum guaranteed area (MGA).
- Article 69 permitted the MS to grant specific payments to certain types of farming, outside of the SPS, either to protect or enhance the environment, or to improve quality and marketing. This provision was used in Greece and Italy to support durum wheat quality, with aids of up to a maximum of €120 per hectare and €180 per hectare, respectively.
- Intervention prices remained unchanged at €101.31 per tonne and the system of export refunds for Annex 1 and Non-annex 1 products (pasta) was maintained.

The reform was introduced in different periods across the major producers. In Italy and Portugal it was introduced in 2005, while in France, Spain and Greece the reform was introduced in 2006.

With EU enlargement, the 12 new MS were permitted to opt for either a simplified Single Area Payment Scheme (SAPS), which decoupled all area payments, or the SPS. The majority; 10 of the 12 (the exceptions were Malta and Slovenia), opted for the SAPS. The 12 new MS were also allowed to make Complementary National Direct Payments (CNDP), on a coupled or decoupled basis, for specific crops, within national budgetary envelopes. Where the CNDP covered arable crops, durum wheat was included.

Simplification of the CAP proceeded further in 2007 when the individual CMOs were placed in one Common Market Organisation. In addition, obligatory set-aside was set at 0% for 2008.

The CAP Health Check, which was approved in January 2009, and is outside the scope of this evaluation, made large strides in the further decoupling of payments. Among the most important reforms, from the perspective of durum wheat, was the integration of most coupled support into the SPS, with the €40 per hectare durum wheat quality premium removed by 2010. In addition, the choice by the French and Spanish governments to retain 25% of arable crop direct payments will disappear from 2010. However, Article 68 permits Member States to elect to make certain coupled payments. Obligatory set aside was abolished from 2009. Durum wheat was also removed from the intervention measures.

2.2 Budgetary cost

Prior to the adoption of the reforms to the CAP, support measures for the durum wheat sector cost in the order of €1 billion annually. Most of this support was directed to France, Greece, Italy and Spain, which accounts for around 96% of total EU-27 durum wheat area. Italy was the

largest beneficiary followed by Spain, France and Greece. Following the implementation of the reforms and the decoupling of support, the direct cost of durum wheat support measures fell to €247 million in 2008.

3. Overview of the sector

3.1 EU position in the world market

Global durum wheat production averaged 37.7 million tonnes per annum over the last five years, with production peaking at 41.5 million tonnes in 2004. The EU-27 accounts for 26% of global production. In addition to the EU, other large producers are Canada, US, Kazakhstan and Russia. The global durum wheat area is in the order of 18 million hectares. EU-27 accounts for 14% of the global area. This is less than the EU proportion of production suggesting higher than average yields in the EU.

In terms of trade, extra EU-27 exports accounted for 15% of global exports in 2006/07. Exports are dominated by the NAFTA region. Of imports, extra EU-27 imports accounted for 22% of trade in 2006/07. Extra EU-27 imports peaked at 32% of global trade in 2003/04.

3.2 EU durum wheat area and production

The area under durum wheat in the EU-27 grew steadily between 2000/01 and 2003/04, peaking at around 4.1 million hectares. Since then, the area has fallen significantly, declining to around 3.0 million hectares in 2006/07. With a substantial rise in prices, the area rose to 3.1 million hectares in 2007/08. Table EXEC 1 shows areas by MS.

Table EXEC 1: EU-27 Durum wheat area by country ('000 ha)

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Bulgaria	15	23	21	23	22	18	0	6	8
Germany	9	5	5	7	8	10	12	8	7
Greece	669	699	713	704	719	719	633	568	580
Spain	868	885	926	913	949	910	614	496	529
France	338	306	336	353	407	423	454	456	436
Italy	1,663	1,664	1,733	1,689	1,772	1,520	1,343	1,437	1,577
Cyprus	6	5	6	7	8	5	7	5	5
Hungary	15	14	11	11	12	9	10	8	9
Austria	16	12	13	17	18	16	16	15	18
Portugal	139	134	188	144	152	2	3	1	2
Romania	2	3	3	1	4	4	4	2	2
Slovakia	4	9	3	5	7	5	4	4	8
United Kingdom	1	1	2	4	2	2	2	0	0
EU 27	3,744	3,759	3,960	3,878	4,079	3,644	3,100	3,005	3,180

Source: Eurostat

Small farms (up to 20 hectares) account for around one third of total EU durum wheat area, equating to around 1.2 million hectares, while large farms (more than 50 hectares) account for the largest share of the area at around 42% (approximately 1.4 million hectares).

In terms of specialisation of durum wheat, it is highest for very small farms (less than 2 hectares) where over 70% of the area is given over to durum wheat. For all other size classes, the level of specialisation in durum wheat production is between 40% and 50%, with the only exception of the 50 to 100 hectare size class where the area under durum wheat is 30%.

Table EXEC 2 presents the evolution of durum wheat production over the review period. After peaking at around 12.6 million tonnes in 2003/04, production of durum wheat has fallen and averaged around 9.4 million tonnes over the last three years.

Table EXEC 2: EU-27 Durum wheat production by country ('000 tonnes)

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Bulgaria	40	63	57	45	70	78	0	14	0
Germany	43	24	26	35	50	51	62	38	39
Greece	1,784	1,721	1,635	1,375	1,724	1,677	1,402	1,218	1,594
Spain	1,939	1,900	2,153	1,989	2,708	935	1,643	1,227	1,146
France	1,685	1,352	1,614	1,427	2,086	2,042	2,100	1,991	2,126
Italy	4,310	3,624	4,268	3,718	5,546	4,431	3,989	3,923	5,067
Cyprus	10	11	13	14	10	9	7	11	10
Hungary	45	49	43	24	54	39	40	29	36
Austria	44	46	50	64	89	63	77	53	91
Portugal	173	103	327	113	235	1	8	3	4
Romania	4	10	8	2	14	10	8	1	7
Slovakia	11	34	12	13	32	22	18	14	37
United Kingdom	6	6	19	14	12	12	12	0	0
EU 27	10,093	8,941	10,224	8,832	12,628	9,369	9,365	8,521	10,156

Source: Eurostat

Italy accounts for around 50% of total EU production. France is the second largest producer, followed by Spain and Greece with similar shares. Overall, these four MS account for over 95% of total EU 27 output. These producers are the focus of this evaluation.

Durum wheat production is concentrated in traditional production areas: In France, between 2000/01 and 2007/08, the traditional area averaged 70% of the total area, in Italy it averaged 97%, in Greece, 99% and Spain and Portugal close to 100%.

3.3 EU processing capacity

The EU durum wheat processing sector consists of two levels: milling of grain into semolina and processing of semolina into pasta and couscous.

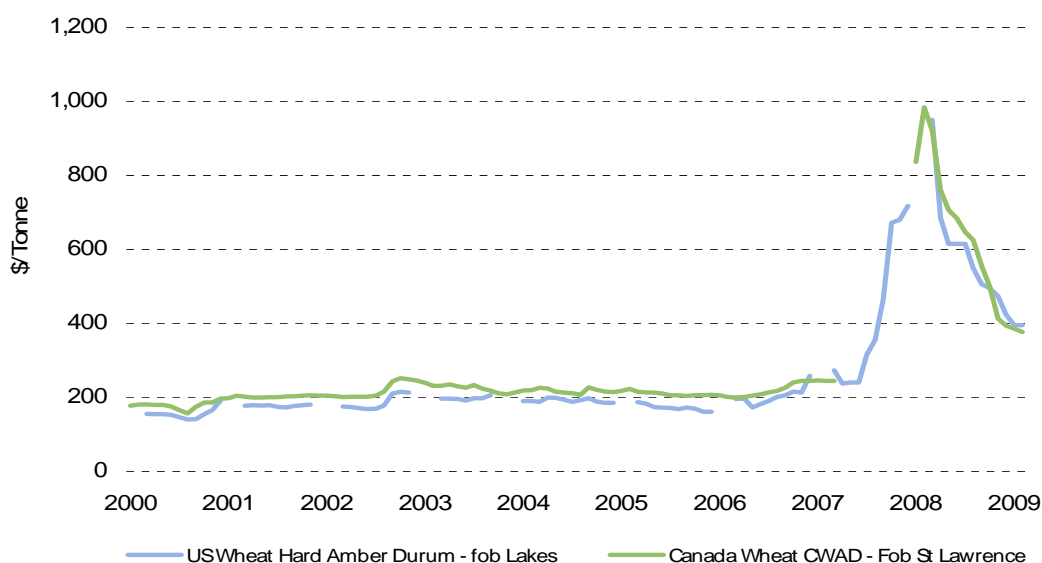
In 2007, the number of durum wheat mills in the EU-27 totalled 209 units. This compares with 233 mills in 2000.

The number of pasta processors in the EU has declined from just below 200 in 2002 to around 180 in 2008. Italian producers account for the majority of processors (128 in 2007).

3.4 Prices

Following seven years of stability, the price of durum wheat rose substantially in 2007/08 as underlying cereal prices rose (Prices of American and Canadian durum wheat are shown in diagram EXEC 1). The differential between durum wheat and common wheat rose to record levels.

Diagram EXEC 1: Canadian and US wheat hard amber durum



Note: The gaps in the data series are due to the fact that US production is not traded throughout the year due to the long hard winters

Source: US Wheat Associates

4. Effects on primary production and structures of production

Evaluations questions 1.1: Maintaining durum wheat production in traditional areas and 2.1: Effects on the geographical distribution of production

Q1.1 and Q2.1. To what extent have the CAP measures supporting durum wheat ensured the maintenance of durum wheat production in traditional production areas, led to structural change and changes in the geographical distribution of durum wheat production?

4.1 Maintenance of production and geographical distribution of production

Following the introduction of the reform, the most important measures affecting production decisions are: the decoupling of aid; the Quality premium in traditional areas; partially decoupled aids (France and Spain); and Aid under Article 69 (Greece and Italy). In terms of production, it is the effect of the combination of the various measures that is analysed as this is what producers see with the change in gross margins. It is difficult to attribute effects to individual measures. In a counterfactual case, where all coupled support for durum wheat and competing crops is set at zero, we assess the effect of full decoupling.

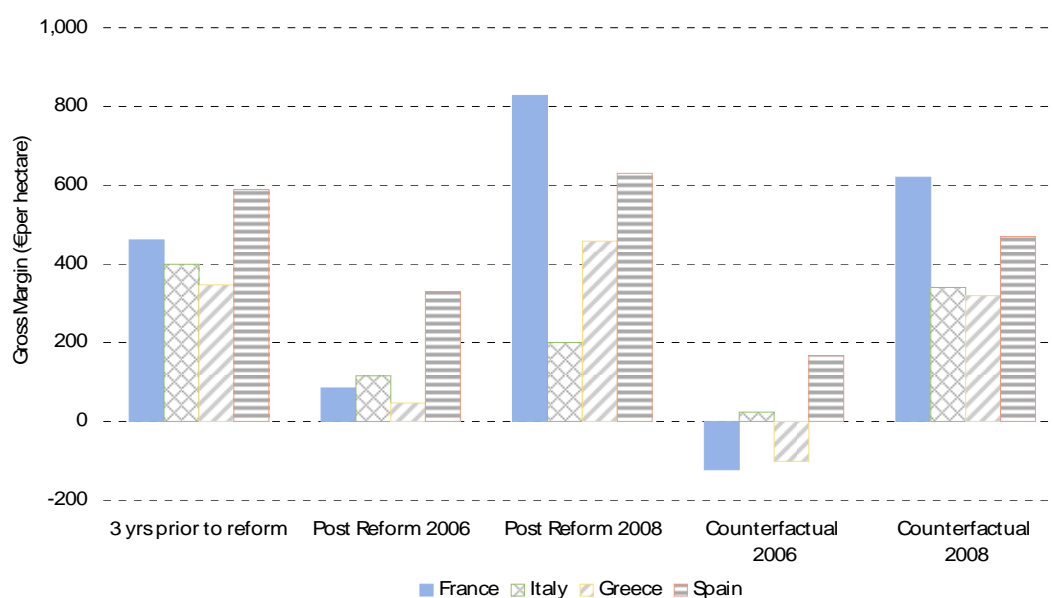
In addition, changes in gross margins and the area under durum wheat are not just caused by the measures. Market forces, as revealed by the underlying level of prices, also have an impact. This is apparent in the post reform period, when durum wheat prices and input costs rose to very high levels in 2008. Consequently, in analysing gross margins, we divide the post reform period into two periods: 2006-2007 and 2008. During the 2006-2007 period costs and prices were at a similar level to those pre-reform. In 2008, durum wheat prices rose to very high levels and production costs rose strongly.

Durum wheat production fell following the introduction of the reform, from an average of 10.0 million tonnes, to an annual average of 9.4 million tonnes, a fall of 6%. With the fall in coupled payments, gross margins initially fell and the area under durum wheat declined. In 2008, with higher prices and costs, the net impact was a rise in gross margins back to pre-reform levels

(Diagram EXEC 2). This encouraged a recovery in production. If 2008 is removed from the analysis then production fell by 9%.

In the counterfactual case, in the absence of support, our analysis points to the durum wheat area falling by a further 18% if prices reverted to 2006 levels or by 4% assuming prices and costs remain at 2008 levels. This conclusion is reached after calculating simple supply elasticities to assess the effect of a change in gross margins on the area under durum wheat.

Diagram EXEC 2: Gross margins, pre- and post-reform



The fall in production has not been uniform across countries, average production fell by 13% in traditional regions and areas rose by 64% in non-traditional regions. Post-reform the traditional area accounts for 85% of production, compared to 91% of production pre-reform. In the few years, post reform, where data are available, the evidence suggests that the reforms have not ensured the maintenance of production at levels that existed prior to the reforms in traditional areas.

The fall in gross margins resulted in a fall in area. The area under durum wheat has fallen by a greater proportion than production (average yields have risen). The area under durum wheat fell by 20% following the reform from an annual average of 3.9 million hectares prior to the reform to 3.1 million hectares post reform (Table EXEC 3).

The examination of the counterfactual case enables us to assess the extent that the measures have ensured the continuation of production. In the absence of coupled payments for all products, the effect on the area planted (and hence production) is very much dependent upon the underlying level of prices. The effect on individual countries would be different, with the countries maintaining the highest amount of coupled aid having the most to lose, overall our analysis points to the area falling by a further 4% in the absence of support (assuming in prices and costs remain at 2008 levels), while the area would fall by 18% at 2006 prices.

Table EXEC 3: EU-27 durum wheat area and production

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	Pre-reform	Post-reform
Area ('000 hectares)											
Traditional	3,551	3,627	3,787	3,722	3,874	3,407	2,837	2,726	2,874	3,717	2,839
Non- trad	193	132	173	156	205	237	263	279	306	183	283
Production ('000 tonnes)											
Traditional	9,203	8,259	9,492	8,079	11,517	8,326	8,015	7,191	8,476	9,159	7,980
Non-trad	891	682	732	753	1,111	1,043	1,350	1,330	1,680	862	1,415

Source: Eurostat

Note: For Austria, France, Greece and Spain, Pre-reform: 1999/00-2004/05, Post-reform: 2005/06-2007/08.
For Italy and Portugal, Pre-reform: 1999/00-2003/04. Post-reform: 2004/05-2007/08.

The fall in area has not been uniform across countries. Of the major producers:

- In France, there has been little change in area or production in traditional areas after 2006 (6% fall), although in non-traditional areas production has increased by 60% as farmers have sought to diversify their plantings. The ranking of gross margins between durum wheat and the main competing COP crops does not change following the introduction of the regime change.
- In Italy, the area under durum wheat has fallen post 2004, however yields have risen and the net effect has been little change in durum wheat production in traditional areas following the adoption of reforms: the non-traditional area increased, albeit from a low base, while the traditional area fell by 17%. In the former case, this is due to plantings on set aside land and a reduction in the sugar beet area. Overall, the UAA has declined post reform. The ranking of gross margins between durum wheat and the main competing COP crops has remained unchanged.
- In Greece, the area under durum wheat has fallen, yields have been maintained and hence production has fallen. At the same time, there has been some increase in the area under common wheat. The ranking of gross margins between durum wheat and the main competing COP crops has remained unchanged.
- In Spain, the area under durum wheat has fallen. Yields have been maintained and hence production has fallen. The non-traditional area fell by 38%, while the traditional area fell by 44%. The changing of the aid regime has altered the ranking of gross margins between durum wheat and common wheat and hence the area under common wheat has increased relative to durum wheat.
- Of the other EU-15 producers, the area collapsed in Portugal, fell in the UK, but rose in Germany and Austria.

4.2 Structural change

Structural change in traditional production areas has been assessed in terms of farm size, area under durum wheat and the intensity of input use. Overall, these data suggest that the reform of the CAP measures has led to little structural change and trends that were apparent prior to the introduction of the reform have continued following the reform. However, the post reform period is only three years, a short time period over which to evaluate structural change.

- Eurostat data reveal a general tendency towards an increasing durum wheat farm size over the whole review period. This trend has continued following the reforms and not been altered by the reforms, although there is only limited data to support this conclusion as post reform, data are not available for all countries.

- In terms of the area under durum wheat, for farmers producing durum wheat the evidence is mixed. The FADN data suggest that there has been structural change in the sense that the durum wheat area as a proportion of total area has fallen in Italy and Greece following the reforms. However, the proportion remains unchanged in France and Spain. This underestimates structural change to the extent that some farmers have stopped growing durum wheat and consequently have fallen out of the FADN sample.
- Analysis of yield trends provides a reflection of changes in input use. Data on yields and from the questionnaires suggest that there has been no change in the intensity of input use following the reforms. In terms of labour, most questionnaire respondents stated that labour use in durum wheat production had not changed over the last three years. In terms of investment in farming, the level of investment has either increased or been maintained in over 80% of farms surveyed.

Evaluation question 1.2: Effects on income

Q1.2. To what extent have the CAP measures supporting durum wheat contributed to the income of producer farmers?

Changes in farm income for the whole of the farm enterprise brought about by the regime change depend not only on the level of support (both coupled and decoupled) and underlying market prices but also farmers' crop choices. A change in the amount of durum wheat planted will affect income depending upon the price and yield of the alternative crop compared to durum wheat.

Total farmer's income per hectare of durum wheat remained broadly unchanged following the reform. While coupled support fell, this reduction was broadly matched by the decoupled payment. Of our case studies from examining FADN data, this was true of Spain and Italy. In France, the decoupled aid was lower by 9%, while in Greece the decoupled payment was higher than the coupled payment. That the decoupled aid was less in France may be a reflection of the small FADN sample size. For Greece, previous experiences (such as the Study on the Cotton Sector in the EU¹) revealed that, there may be an element of double counting in the calculation of the support.

The changes to coupled payments mean that they now account for a lower proportion of revenue than was the case pre-reform, although the proportion also depends on the level of durum wheat prices. While the fall in coupled payments has lowered gross margins for both durum wheat and competing crops, among our case study countries, the ranking of durum wheat has not changed noticeably following the reform. The only exception to this is Spain, where common wheat ranks above durum wheat following the reform.

That there is greater flexibility in crop choice following the reform can be seen from the questionnaire responses. The majority of respondents, across countries stated that the coupled payment was less important in determining crop choice than was the case prior to the reform. Respondents cited the price paid by wholesalers as the main reason behind their crop choice. This is more likely to be the case following the introduction of the reform as the coupled proportion of income has fallen.

Further insights into changes in total farm income can be gleaned by examining trends in the FADN data for durum wheat specialists. In three of the case study countries, Italy, Greece and Spain gross farm income, farm net value added and family farm income are higher after the reform, compared to the three year period prior to the reform. In France, the indicators are

¹ http://ec.europa.eu/agriculture/analysis/external/cotton/index_en.htm

lower in the post reform period. However, in the French case, the number of observations is relatively small. When we examine data for the same cohort of farms in Italy and Greece over the period 2003 to 2006, farm incomes are found to be lower following the reform.

By lowering gross margins, the measures have also negatively impacted the implicit return to (unpaid) family labour. However, for the calculation of farm income the decoupled payment should be included in the implicit wage. Including the decoupled payment reveals that per hour incomes were at a similar level pre and post reform.

Evaluation question 1.3: Effects on quality in traditional production areas

Q1.3. To what extent have the CAP measures supporting durum wheat increased the quality of durum wheat production in traditional production areas?

There are two measures that are specifically targeted towards quality. The quality premium and Article 69 measures in Italy and Greece. There are a number of determinants of quality, the most important being protein content, specific weight and colour. Among the processors protein content was the most commonly cited measure of quality and hence we focus on protein content as our measure of quality.

When asked whether quality had improved following the reform, the majority of processors interviewed across the four case study MS responded that there had been no change. Although a proportion in Italy and Spain cited that there had been an improvement in quality. This assessment is backed up by field data where it is available: in Italy, protein content has been unchanged since 2004. On average the protein content has been lower following the reform (the annual average falls from 13.2% to 12.3%); in France, the protein content is unchanged following the reform. In Spain, the protein content fell in 2007 and 2008, although there is considerable variability in annual observations.

Italian quality is below that of France, Spain and the US (Diagram EXEC 3), hence the need of the processing industry to import durum wheat to improve the overall quality level.

Diagram EXEC 3: Average protein content of Italian, French, Spanish and US durum wheat



Source: Agricultural Research Council (CRA), ONIGC, IGC

While the post reform period only covers three years, there are a number of reasons why quality has not improved following the reform, despite the introduction of a specific policy measures:

- A large number of varieties are eligible for the premium and the protein content of these varieties varies. Of the eligible varieties, our analysis revealed that farmers will select higher yielding varieties as these will maximise their revenues. Research station evidence in Italy suggests that there is an inverse relationship between yield and quality.
- The implementation of the quality premium is different in each country. In Greece, the requirement is that 80 kg of eligible seed is used per hectare (compared with a total requirement of 250 kg). This limits the potential impact of the premium. In Italy, 180 kg per hectare of eligible seed is required. In Spain, the amount is 250 kg per hectare.
- The large number of eligible varieties and the small farm size mean that there is little consistency in the qualities received by millers.
- Weather conditions, high level of rainfall during the growing season adversely affects quality.

Over the three year post reform period, our analysis suggests that the reform has not met one of its main objectives, namely the objective of improving quality. Instead, quality has been largely unchanged. However, this conclusion is based on just three years worth of observations. The effect of the development and use of improved varieties and improved farmer practises may require a longer time horizon.

5. Effects on downstream sector

Evaluation question 3.1: Impact on the supply to the downstream sector and changes in the geographical distribution of the processing industries

EQ3.1 To what extent have the CAP measures supporting durum wheat allowed sufficient levels of production (quality and quantity) at suitable prices with respect to needs of the downstream sectors, and to what extent has the support induced changes in the geographical distribution of the processing industries?

Availability of durum wheat for the EU processing industry has risen slightly following the reform, from around 8.7 million tonnes per year in the period 2000-2004 to 9.3 million tonnes in the years 2005-2008, an annual growth of 1% since 2000/01. There has been no change in the trend pre- and post reform.

However, when imports are excluded from the picture, and after accounting for exports, whose share increased post reform, our analysis reveals that the importance of domestic durum wheat production relative to total supply decreased slightly post reform, falling from 88% to 83%. The decline is even more significant for traditional area production, the share of which has changed from 78% pre-reform to 71% post reform.

As a result of lower domestic production and increasing export volumes, the importance of imports to meet the requirements of the EU processing industry has increased. Imports as a proportion of total availability averaged 21% per year post reform, compared with 15% in the years pre-reform.

In terms of quality for most of the processors interviewed, quality was observed to be unchanged post reform. For Italy, the fragmentation of supply was cited as being one of the main obstacles to achieving a consistent level of quality in line with the industry's

requirements. Imports of high quality durum wheat (from within or outside the EU) are required to achieve the desired level of quality.

In addition to quality, price and supply were mentioned by processors as reasons for substitution, suggesting that it is fairly easy to switch between domestic and imported (from outside the EU) durum wheat. This is confirmed by the inverse relationship between the change in production and the change in imports. Analysis of Eurostat data confirms that, in years when production falls, imports rise and *vice versa*. Additional evidence of the existence of a considerable degree of substitutability is provided by the behaviour of US durum wheat prices and durum wheat prices in Italy, the largest durum wheat importer. These price series move together suggesting a high level of substitutability.

Over the review period, the EU processing milling sector has undergone a significant process of consolidation. However, there is no evidence that this process intensified or slowed down as a result of the reform. Very limited consolidation took place in the pasta sector, with smaller operations ceasing production and average size of plants increasing over time. This outcome was confirmed by the processors' answers to questionnaires, which also revealed that the change in regime did not impact the geographical location of their factories.

Evaluation question 3.2: Impact on the supply to the downstream sector in traditional production areas

EQ3.2 To what extent is the objective of ensuring sufficient levels of production (quantity and quality) in traditional areas relevant with respect to the user industries needs (e.g. in terms of added value of local production)?

There is general consensus among the processors interviewed that the objective of ensuring sufficient domestic production is important for their needs, although this production does not have to be limited to traditional areas. The desirability of domestic production is due to the higher, largely transport, costs associated with imports and greater perceived risk, in terms of exchange rate movements and availability. In the latter case, this arises due to the importance of Canadian imports and the monopoly on trade held by the Canadian Wheat Board.

In the case of a production shortfall, as cited above, processors are able to substitute imports for domestic production.

Even given increased imports in recent years, imports still account for under 20% of total availability, the majority of production is sourced locally. The volumes imported vary considerably between markets. Across the four case study MS, Italy is the producer that most relies on imports; and its level of dependence has not changed following the reform. Spain has become more reliant on imports post reform, however this is partly due to the poor 2005 crop which increased the need for imports, while in France import share of total availability has declined. Greece is the producer least reliant on imports, with 95% of availability being met by domestic production with small volumes being imported by some processors to increase average quality.

That imports only account for 20% of availability suggests that the objective of ensuring sufficient production is important.

6. Effects on Markets

Evaluation question 4.1: Promoting market stabilisation and EU participation in international trade

Q.4.1 To what extent have the CAP measures promoted market stabilisation and supported EU participation in international trade?

The 2003 reform retained existing CAP measures such as intervention prices, the system of export refunds and border measures. In terms of market stabilisation, our assessment distinguishes between stability of prices and stability of supply.

There is no clear evidence that the 2003 CAP measures promoted price stability within the EU market. While in Italy, stability of prices was greater following the implementation of the measures in 2005, as revealed by the coefficient of variation and the max-min range applied to Italian annual price data, for all other case study MS, namely France, Greece and Spain, our findings reveal that stability was less in the years following the implementation of the reform. However, there are only limited observations with which to draw this conclusion.

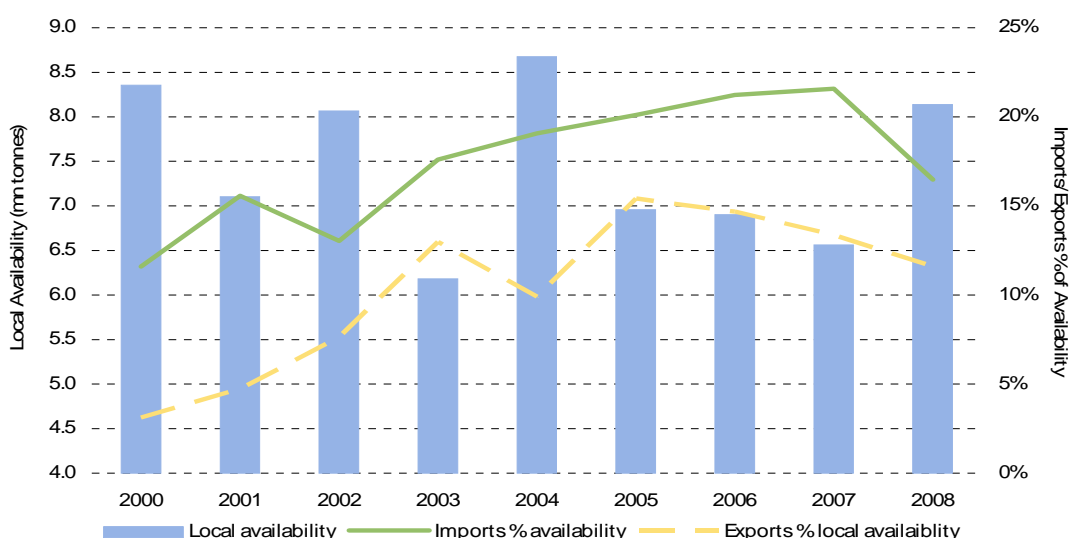
With regard to stability of supply, imports are a crucial element for the EU processing sector as first they help reach the level of quality demanded by end users; and second they cover any shortfall in production. Our analysis shows that, since 2000/01, the share of durum wheat imports consumed by the EU milling sector has increased. This suggests that the measures have not promoted stability of domestic supply, but it can nevertheless be concluded that the measures have not interfered with the ability of the processing sector to access the world market. This is in part due to the absence of import duty on durum wheat. Import duty has been zero over the review period.

In terms of EU participation in international trade, the EU's share of world output has remained fairly stable over the years 2000-2008. Although it declined slightly in the period 2004 to 2008, this value is not significantly different from the trend followed in the period pre-reform.

Since 2000/01, EU imports of durum wheat have increased significantly. Import volumes have been particularly sizeable in years when a shortfall in production occurred. Like imports, exports of durum wheat have also risen significantly, albeit from very small starting volumes. While the system of export refunds was retained in the reform, durum wheat exports have been made without export refunds since early 2000. Trade has increased as market conditions have dictated. Based on this consideration, it can be argued that the 2003 measures did not alter the EU's participation in international trade.

The evolution of imports and exports expressed as a share of local durum wheat availability is shown in Diagram EXEC 4 for the years 2000 to 2008. It highlights the inverse relationship between availability of local supply and imports.

Diagram EXEC 4: Imports and exports as % of local availability



Source: Eurostat, Semouliers

7. Effects on rural areas

Evaluation question 5.1: Promoting rural development in traditional areas

EQ5.1. To what extent have the CAP measures supporting durum wheat promoted rural development in traditional areas with respect to employment and economic viability?

In the EU-27, the importance of durum wheat to total agricultural output declined following the reform to around 0.7% from 1.1% pre-reform. This change is even more significant in the traditional production zones, where the value of durum wheat as share of total agricultural output fell from 4.5% to 3.7%.

The effect of the reform on employment needs to be split between changes in farm and processing industry employment.

Following the reform, farm employment from durum wheat has fallen due to a smaller number of farms growing durum wheat and a lower crop area. In the former case, there is also weak evidence that farm sizes have increased. FADN data suggest that larger farms have lower per hectare labour requirements, thus employment requirements are reduced further. The per hectare amount of time spend on durum wheat production has not changed. The net effect on employment though is dependent upon what crops farmers switched to. If farmers switched to crops requiring more labour, the effect on employment would be positive.

Of the five largest producers which account for 98% of the EU durum wheat area, with a lower farmed area in Italy and Greece following the reform employment has fallen. In France, Spain and to a degree Portugal, the switch to alternative crops means that the fall in employment was limited or virtually non-existent. A switch from durum wheat to common wheat is neutral in terms of employment as labour requirements are similar.

Within the processing industry, employment levels have fallen as the industry has consolidated. This consolidation though can not be attributed to the reform.

For durum wheat, the effect of the reform on economic viability can be measured in terms of changes to gross margins and the return to labour. In the former case, in the extreme, when the gross margin falls below zero, production would be expected to cease and the crop is no longer

viable. When the gross margin of durum wheat is reduced relative to that of alternative crops, production would be expected to switch to the crop that is more viable with a higher gross margin.

Our analysis of gross margins reveals that gross margins (for both durum wheat and competing crops) and the return to unpaid labour fell following the reform. The effect of this was different in each MS: in Italy, farmers reduced the area under durum wheat, with few alternative crops, the total utilised agricultural area (UAA) fell. In Greece, the UAA also fell, while in other cases, farmers switched to common wheat. In Spain, farmers ceased durum wheat farming in favour of common wheat, while in France the viability of durum wheat production was not affected. As a result, area under durum wheat was unchanged.

A further effect of the reform could be to facilitate structural reform by encouraging the least competitive farms to leave the industry while the most competitive operations increase their area. As the reform only occurred two to three years ago, depending upon the MS, it is still too early to determine whether the reform has facilitated this structural change.

This suggests that the 2003 reforms did not promote the economic viability of durum wheat, when this is assessed in terms of gross margin advantage and return to unpaid labour. However, the increase in decoupled payments has stabilised farmers' incomes and reduced farmers' risk. Farmers' incomes are now no longer fully dependent upon the returns to a particular crop or a combination of crops. By reducing risk it can be argued that economic viability for the rural areas has been enhanced.

8. Efficiency, management and administration

Evaluation questions 6.1: Efficiency of the measures and 6.2: Simplification and effective administration of the CAP

Q6.1 To what extent have the CAP measures applicable to the durum wheat sector after the 2003 reform been efficient in achieving the objectives of these measures?

Q6.2 To what extent have the CAP measures supporting durum wheat contributed or counteracted to achieving a simplified and effective administration and management?

The reform can be considered relatively efficient in terms of maintaining production as the cost to the EU budget of coupled support (focussed at both production and quality) has fallen by some 70%, while durum wheat production declined by 7%, although this is partly due to higher non-traditional area production. In traditional areas, area contracted by 23% following the reform, while production was 13% lower.

In terms of quality improvement the reforms have not been efficient as quality has not improved, although three years is a short period to make this judgement. This is partly due to the way in that the reform has been implemented, in terms of the large number of eligible varieties (characterised by different yields and quality levels) and the quantity of eligible seed required to be planted to receive the premium. For instance, in Greece, only around one third of total seed requirement per hectare as to be certified seed, limiting the potential impact of the premium.

In terms of administrative burden, prior to the reform producers were required to notify the authorities of the area under durum wheat, this was verified and then payments made, the amount depending upon whether the area was a traditional or non-traditional area. Following the reform a number of points can be made:

- Producers are still required to document the area under durum wheat, there is no change pre- and post reform.

- The quality premium details of both the variety and quantity of eligible seed per hectare are required. The same applies to details of the varieties that receive the premium under Article 69, for the MS applying this measure. This has increased the administrative burden.

As our analysis suggests, the reform has not added to the overall administrative cost of the CAP measures from the point of view of national paying agencies. This conclusion is drawn from an analysis of French data where a partial decoupling model was adopted. Similar data are not available for other countries. Within the durum wheat sector, the administrative requirements for farmers have not been simplified.

9. Relevance and coherence

Evaluation question 7.1: Effects on the environment

Q.7.1 To what extent have the CAP measures supporting durum wheat influenced the environment?

Following the reform, there has been little change in input use of durum wheat or its main competing crops on a per hectare basis. This means that the effect of the reform on the environment is dependent upon cropping patterns following the reform. The area under durum wheat fell. In a minority of cases durum wheat was replaced by common wheat, but in most cases the area set aside increased and the total utilised agricultural area fell.

In terms of an environmental impact a switch to common wheat is neutral as the level of input use is similar to durum wheat. A reduction in the farmed area can either mean that land has been abandoned or it is maintained in good agricultural condition in order to ensure cross-compliance and the payment of the single farm payment. In the latter case, this is assumed to have environmental advantages.

Comparing the planted areas for the largest five producing countries reveals that since the reform the average area under durum wheat fell by 20% following the reform. This fall in area was partially compensated by rises in area for common wheat, rapeseed, barley and set-aside. However, the fall in the durum wheat area is greater than this and hence the total COP area also fell. Assuming that the set aside area corresponds to land being maintained in a good agricultural condition this accounts for 450,000 hectares of the change in area. That the total COP area plus set aside falls suggests that a proportion of land is no longer farmed (around 570,000 hectares).

Evaluation question 7.2: Coherence of the measures

Q.7.2 To what extent are the CAP measures supporting durum wheat after the 2003 reform coherent with the principles of the reform of the CAP (first and second pillar) and with overall EU objectives?

The reform has broadly been coherent with the objectives of the CAP, although it must be stressed that this judgement is made on just two to three years worth of evidence. Some of the impacts require a longer time period to work themselves out:

- Market orientation has increased, as the level of coupled payments as a proportion of revenue has decreased, and level of international trade has increased.
- Competitiveness has been maintained. The level of exports has increased and export and import prices are closely aligned.
- Reasonable prices to producers have been maintained and international and local prices are observed to generally move together.

- Producer incomes have been maintained. The fall in revenue from the production of durum wheat has been offset by a rise in decoupled payments.
- The environmental impact has been neutral in the sense that there has been no change in production technology. Where the area has switched to common wheat, as far as can be judged, this has not had a negative influence on the environment. The effect of a fall in the farmed area depends on whether the land is maintained in good agricultural condition or abandoned. The former is assumed to have environmental advantages. Our analysis suggests that both set aside and the non-farmed area have increased.
- In terms of employment generation, there has been no change in employment in the processing sector as a result of the reforms. The volumes processed have continued to increase as demand for EU pasta grows. Where employment has fallen this has been due to industry consolidation, although the level of consolidation has been modest following the reform. The major consolidation occurred prior to the reform.
- In terms of farm employment, this has fallen as some areas, mostly in Italy and Greece, have been taken out of production and not replaced by other crops.

Evidence from the farmer survey indicates that the coupled payment is less important in determining crop choice than was the case prior to the reform. Respondents cited the price paid by wholesalers as the main reason behind their crop choice. As for the importance of the coupled payments in determining the amount of durum wheat planted, most producers stated that it had a slight effect.

10 Conclusions and recommendations

10.1 Supply-demand balance

An examination of the supply-demand balance, as presented in Table EXEC 4, shows changes that have occurred since the adoption of the reform since 2005. Not all the changes can be attributed directly to the reform or to specific measures of the reform, but the Table does show how the EU durum wheat market has altered. The main influence on the supply-demand balance outside of the reform has been the changes to market prices, particularly the rise in prices and costs in 2008.

Table EXEC 4: Durum wheat EU-27 supply-demand balance ('000 tonnes)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	Pre-reform	Post reform
Production	10,093	8,941	10,224	8,832	12,628	9,369	9,365	8,521	10,156	10,144	9,353
Imports	1,095	1,305	1,207	1,358	1,713	1,807	1,948	1,990	1,615	1,336	1,840
Total supply	11,188	10,246	11,431	10,190	14,341	11,176	11,313	10,511	11,771		
Non-feed use											
Feed use	483	477	484	798	2,017	359	626	327	257	852	392
Seed use	937	955	1,002	975	1,028	917	747	698	756	979	780
Exports	260	336	617	802	859	1,073	1,013	876	945	575	977
Losses	58	69	56	77	51	61	63	58	61	62	61
Change in stocks	5	28	14	-179	1,408	-219	-330	-675	-44		
Availability for millers	9,445	8,380	9,259	7,716	8,979	8,984	9,195	9,226	9,796	8,756	9,300

Source: Eurostat, UNSEN, LMC

The analysis of this report reveals that:

- Durum wheat production fell following the reform. The objective of maintaining production in traditional areas has not been met by allowing for partial decoupling (Chapter 4).

- The instruments of a quality premium and Article 6g have not brought about the achievement of the envisaged quality objective viz. increasing quality (Chapter 4).
- With the fall in production, imports rose, although imports began to rise ahead of the reform in 2004. A key reason for imports has been to import high quality durum wheat to increase the average quality of durum wheat flour (semolina) to the downstream industry (Chapter 5).
- Durum wheat exports also increased following the reform, although the trend towards higher exports began in 2002 ahead of the reform. With increased imports and exports, the EU participation in international trade has increased (Chapter 6).
- The volumes processed by the milling industry have increased by 1% per annum on average since 2000. There has been no change in this trend after the 2003 reform (Chapter 5).
- In order to ensure adequate availability, the reduction in production has been met by higher imports and a reduction in stocks (Chapter 5).

10.2 Recommendations

10.2.1 Introduction

While the overall objective of the 2003 reform was to increase market orientation in the agricultural sector, recital 35 of the regulation identified the specific objective of the support for durum wheat to be the maintenance of the role of durum wheat production in traditional production areas while strengthening the granting of the aid to durum wheat respecting certain minimum quality requirements. Consequently, due to different national circumstances and preferences there has been a different approach of MS. In France and Spain the partially coupled aids have sought to maintain production in traditional areas, with differing degrees of success, while in Greece and Italy, the use of Article 6g in addition to the quality premium has sought, with little success, to improve quality.

Under the CAP Health Check, coupled support to durum wheat is to be phased out in 2010. Our analysis suggests that this will likely lead to a further reduction in the area under durum wheat as gross margins fall. For some producers, at certain prices, gross margins will probably even become negative. Where this happens producers will either switch production to crops where margins are higher, or cease farming these areas all together (with the land either being abandoned or maintained in good agricultural condition in order to benefit from the single farm payment).

10.2.2 Recommendations

- One of the expected impacts of decoupling in the longer term would be to see the least efficient farms leave the industry, while more competitive operations expand their area. Our analysis of FADN data suggests that variable costs are lower for larger farms. This suggests that an alternative solution to a reduction in area, in areas where agricultural and climatic conditions mean that there are no alternative crops, could be to encourage the farming of larger areas. The benefit of an increase of area size is that per hectare production costs are found to be lower on larger farms, this then leads to higher gross margins. However, farmers must also foster competitiveness in other ways e.g. by organising economies of scale, pooling of costs, equipment and labour, cooperation in financing of activities and marketing and by training that is beneficial for increasing productivity.

- The ending of the quality premium could have ramifications on durum wheat research. At present a proportion of the quality premium is used to cover the higher cost of certified seed. In many markets, with the exception of Italy, durum wheat production is relatively small compared to total COP crop production. In the absence of the quality premium, there is a danger that certified seed use falls and durum wheat research declines. Maintaining and enhancing competitiveness of the sector in the long run would require that enough funds are available for research.
- Our analysis suggests that the quality objective has not been met, despite the introduction of a quality premium and Article 6g in Italy and Greece. The quality premium is to be abolished in the 2010 reform and as improvement of quality is still relevant for competitiveness, the issue of a reward mechanism for higher quality from the perspective of the industry needs therefore to be addressed. With the ending of the quality premium this will no longer be a public policy issue (unless payments are made under Article 68). As the examples in the report show the private sector is already paying in some cases.