

Synthetic Summary

1.1 Introduction

This evaluation examines the impact of measures under the Common Agricultural Policy (CAP) applied to the cereals sector covering the period from 1 January 2005 onwards. In 2003, the Mid-Term Review (MTR) marked a major change in policy with the introduction of 'decoupling' and further adjustments were made under the 2008 CAP Health Check. The focus of measures, specifically in the cereals sector, shifted from automatic price support to safety net measures. Increased emphasis was also placed upon meeting sustainability, greater market orientation and a competitive sector.

The crops examined are common wheat, durum wheat, barley, maize, rye, oats and triticale; policy impact is discussed for the EU-27 as a whole, complemented with analysis from ten Member States (MS). Comparisons have been made between the situation in 2000-2003 ('pre-reform'), 2004-2006 ('transition') and 2007-2010 ('post-reform').

1.2 Overview of the cereals sector

1.2.1 Areas and production

Between the pre- and post-reform periods, EU-27 cereal areas fell from 60.4 to 58.0 million hectares, but the major change in cereal, oilseeds and protein (COP) areas was a sharp expansion in the oilseeds area. Rapeseed benefited from the cultivation of non-food crops on set-aside land and the energy crop payments, and was the main feedstock in the biodiesel sector. Protein crop areas fell sharply, while uncultivated land initially rose and then fell back after the application of zero rates of set-aside.

Common wheat increased its share of the total cereal area from 37% to 40% over the decade; barley's share remained steady at 23%, but that under maize fell from 16% to 14%. The share of durum wheat fell from 5% to 4%, while that under rye and 'other cereals' remained stable at 5% and 14% respectively.

Cereal output rose by 5%, but its rate of increase was dwarfed by that of oilseeds, up 46% in the same period. Yields for all five main cereal crops increased, with maize and common wheat consistently recording the highest yields. Maize and durum wheat yields displayed comparatively fast-rising trends, while common wheat, barley and rye yields showed more modest advances.

In terms of self-sufficiency, common wheat, barley and oats all produced surpluses throughout. Durum wheat was the only cereal with a consistent deficit.

1.2.2 End-use developments

The contribution of biofuel provided an additional 6.6 million tonnes to cereal demand over the period under review. Without this growth, combined EU-27 cereal consumption in the post-reform period would have been barely two million tonnes above that of the pre-reform level. In feed, the largest end-use for cereals, the cereal share of industrial feed output rose from 43.1% to 47.5%.

For human consumption, the second largest cereal end-use, demand was relatively stable. This primarily consists of milling for flour. In industrial use, the starch sector witnessed an expansion of processing capacity in Western and Central and Eastern Europe. However, while most of the grind capacity is still located in the EU-15, the EU-12 had a more rapid rate of growth in processing capacity and increased its share of the total EU grind.

1.3 Description of the policy framework

The Common Market Organisation (CMO) for cereals provided the legal framework for internal and external 'market intervention' measures from 1967 to 2007. The reform package, Agenda 2000, set the regulatory framework until the 2003/04 marketing year¹ and was superseded by a Single CMO in 2008 that brought together the different agricultural products under one Regulation.

Two major reform packages radically reshaped cereal policy in the EU-27. Before 2003, support measures consisted mainly of coupled crop-specific payments, supply control (through 'set-aside'), production refunds for starch processors, the provision of a safety net via intervention, and border measures, notably import tariffs and export refunds.

The 2003 MTR package radically altered the operations of the CAP, introducing 'decoupling', where income support was paid irrespective of the type or level of production in a particular year, and both 'cross compliance' and 'modulation' reinforced the move towards sustainable farming practices.

The 2008 CAP Health Check set the existing framework applicable to the cereals sector. This now comprises internal market support, border measures and direct payments. In addition, optional 'Article 69 and 68' measures can be used to support the cereals sector. In practice, some MS have opted to apply these measures to durum wheat while other MS have directed them towards their livestock sectors, indirectly influencing the demand for feed cereals.

1.4 Main conclusions on the impacts of reform

1.4.1 Impacts on the production of cereals

One outcome of the greater freedom given to producers in their production decisions was an increase in the cereals share of the EU-27 Utilised Agricultural Area (UAA) from 31.5% to 32.3%, pre- to post-reform, but this was entirely the result of an increase in the EU-12.

Common wheat, notably in the EU-15, showed signs of greater specialisation, and significantly expanded its share of the cereals area. The decline in coupled aids for durum wheat in EU-15 MS caused the share of this crop to contract substantially.

Among EU-12 MS, the most striking change was the rise in the area under 'other cereals', reflecting the continuation of coupled supports to livestock and the use of Article 69 and 68 measures.

The three EU-15 MS that provided higher coupled payments for maize under the Agenda 2000 reform, all cut maize plantings after decoupling was introduced. Those that did not pay higher area payments for maize increased their maize areas.

The removal of rye from the scope of intervention saw the rye share of cereal areas fall slightly post-reform in the EU-15, whose MS had previously benefited from this safety net for rye. There was a sharper decline in the EU-12, but this was attributed to a shift to 'other cereals'.

We assessed the impact of the end of compulsory set-aside in the EU-15 on yields. Internationally, average EU-27 cereal yields were the highest among the leading producing countries of common wheat and barley, but were close to the world average

¹ The marketing year runs from 1 July of the first year to 30 June of the following year.

for maize. However, the volatility of EU yields was lower than for most other major producers.

In terms of absolute yield growth, EU common wheat yield increases were the highest among all the leading producers, but the EU-27 recorded some of the lowest yield increases among the group of major barley and maize producing nations. The end of set-aside was estimated to have reduced all cereal yields by 0.9% and may explain these two poor performances.

Crop rotation practices revealed that several EU regions, encouraged by the appeal of oilseed farming, planted oilseed crops above the maximum agronomic recommendations for oilseed/cereal rotations. This will eventually have adverse implications in terms of pest and disease cycles, as well as soil quality/fertility.

Changes observed in production technology have also been encouraged by broader CAP support. Cross compliance provides a good example where producers have increasingly adopted zero grazing (keeping dairy cattle indoors in tightly-packed, warm barns) or taken up collaborative farming.

Analysis of the relationship between gross margins estimated that a 1% increase in average gross margins on all COP crops raised total COP areas by 0.4%. Simulations of the removal of all coupled aids in 2007-2010 upon total cereal and oilseed areas indicated that they would have fallen as follows from their actual level: a 7.3% fall for durum wheat; a 3.3% drop for barley; and falls of 2.3-2.5% for common wheat, maize and rye.

1.4.2 Impacts on the supply to the EU processing industry

In most years, the EU malting barley sector produced a supply surplus, with average malt exports of 4-5 million tonnes, in grain equivalent. Interviews with trade associations revealed few concerns about availability of suitable qualities of supplies.

Common wheat use in flour milling increased from 58.6 to 61.0 million tonnes, pre- to post-reform and the interviews revealed that the amounts available under tariff rate quotas and as free market imports of high protein wheat met users' needs.

Durum wheat was the one sector with a consistent deficit and a growing reliance on imports. The share of domestic durum wheat in overall supply fell from 86.3% to 82.6%, pre- to post-reform.

In the feed sector, the balance between domestic cereals, imported cereal substitutes and oilseed meals changed significantly. Cereals increased their share of EU industrial feed use, from 43.1% in 2000-2003 to 47.5% in 2007-2010, making significant gains until 2005, mainly due to a 70% drop in imports of cereal substitutes.

In the cereal starch sector, new capacity has been added in both Western and Central/Eastern Europe since 2000. However, the rate of expansion was faster in EU-12 MS, where capacity grew from a relatively smaller base. The reduction in the role of intervention was one contributory factor behind this geographical shift towards lower-priced landlocked MS.

The biofuel sector has been the most rapidly expanding end-use for cereals, particularly since 2004. Initially, feed wheat was the favoured feedstock for dry milling plants, but since 2008, maize use has increased, particularly in Central and Eastern Europe, following the lead of the starch processing sector.

Statements from the interviews indicated that a major concern across all end-use sectors is policy towards genetically modified maize imports, rather than CAP-specific measures.

1.4.3 Competitiveness of the cereals sector

Direct production costs were compared for the three major cereals for the ten case study MS against Ukraine, Russia and different regions of the US. The analysis revealed that the EU was cost-competitive versus the US in common wheat and barley. With maize, the US was always more cost-competitive.

In the cases of Russia and Ukraine, average costs of common wheat in Russia were significantly below those in the EU, while those in Ukraine were close to those in the EU. Barley costs in both countries were below those in the EU every year, except in 2007 when drought hit production. Ukraine's maize costs were lower than the US after 2004, while Russian costs were similar to those in the US.

In terms of yield volatility, the evidence was weak to support our hypothesis that decoupling discouraged plantings in MS with low yields and encouraged them in MS with high yields.

In terms of competitiveness in international trade, the EU's share of total world exports of wheat and flour rose from 5.2% to 7.7%, pre- to post-reform. However, in other cereals, its share fell from net exports of 6.2% to a net import share of 0.2%, indicating that the reforms promoted the EU's comparative advantage in common wheat production. Furthermore, the EU maintained or raised its share of imports in its traditional regional export markets despite stronger competition from Black Sea exporters.

The analysis revealed that both the price level and volatility of EU cereal prices increased, post-reform. This indicates greater openness of the EU market, which reflected the higher prices and greater volatility on the world market, but an unexpected outcome was higher volatility in EU internal prices than that computed for world market prices.

In terms of producer incomes, we focused our attention on the types of farm holdings that were most heavily dependent upon cereals and deduced that the nominal value of coupled plus decoupled aids per hectare had barely changed from pre- to post-reform. In real terms, the value fell slightly. Studying the trends in incomes with four alternative definitions, led us to conclude that producer incomes normally increased in real terms. The same real increase was found in the counterfactual case, where no aids were paid; but the cause was external, namely higher world market prices, rather than the impact of CAP aids, which fell in real terms.

1.4.4 Administrative costs for cereal producers

The introduction of decoupling shifted the focus over the period from crop-specific area payments to the decoupled Single Payment Scheme. Both the producer survey and interviews with their associations indicated that producers felt that there was an increase in the administrative burden. However, it was clear that they were not necessarily differentiating between administration for the CAP as a whole and measures related specifically to cereals.

Cross compliance was one aspect cited as have become more onerous since the MTR, despite simplification under the Health Check. In addition, increased concerns over penalties under cross compliance, as the range of farm activities expanded, had led to

growth in zero-grazing systems because livestock farming is seen as liable to face cross-compliance challenges.

The national payment agencies cited a decline in the employment required to administer the SPS and broadly welcomed the reforms.

1.4.5 Innovation

In the certified seed sector, cereal producers in the EU turned away from certified seeds towards the use of on-farm retained seeds, most notably for durum wheat. The barriers to GM varieties allowed the EU to develop exports of non-GM varieties of maize seed, with net trade rising from a deficit of 19,000 tonnes, pre-reform, to a surplus post-reform. For 2011, this surplus increased to 48,000 tonnes.

Changes in farming practices were more difficult to relate to specific CAP reforms. The questionnaires revealed that EU-15 producers tended to reduce their use of chemical inputs, while with EU-12 producers, it was the reverse.

By far the most important development in novel uses of cereals has been the development of biofuel crops policy. Silage maize use for biogas is a distinctly German initiative and it is evident that no other MS matches Germany's expansion. German silage maize output for biogas means that this one cereal crop now occupies 11% of the entire German UAA.

Biopolymers are seen as a growth area, which has only developed significantly after the period covered by this evaluation. We estimate that by the end of the evaluation period, the EU-27 capacity to process cereals into biopolymers was in the region of 175,000-200,000 tonnes of cereals per annum. Most of this biopolymer capacity is for bioplastics.

1.4.6 Sustainability of the cereals sector

Decoupling had a generally neutral environmental impact regarding the changes in area between the different cereals. Input use among different cereals is generally very similar²; the main exceptions are the declines in durum wheat production in traditional areas, which have lower application rates of fertilisers, pesticides and irrigation, and in irrigated maize farming, which has higher than average levels of input use.

It was also found that producers were often pushing the recommended frequencies of rapeseed plantings above the recommended one-in-four years, given the appeal of oilseeds.

Since the removal of set-aside, there was a 20% decline in the fallow area between 2007 and 2008. There is some evidence of an adverse impact on biodiversity from data on farmland bird populations across the EU.

The evidence suggests that it is agri-environmental payments, under Rural Development schemes, rather than cereal-specific measures, which had a greater impact on encouraging sustainable practices on farms.

1.4.7 Efficiency, coherence and relevance

Taken as a whole, the reforms have introduced an increasingly liberalised approach to cereal production. The reforms have been relatively efficient, with the cost of coupled aids falling and the administrative burden to the public sector reduced. However, many producers state that the administration associated with their benefits from the CAP has

² [LMC Evaluation of the Durum Wheat CMO](#), page 133.

not fallen, as a result of have to meet cross compliance conditions. In the case of durum wheat, where specific coupled payments were paid under the MTR for high quality output in traditional durum wheat growing regions, we concluded that there is deadweight in the measures, since the output of high quality durum wheat fell significantly.

The ending of set-aside and tightening of the criteria for sales to intervention, by allowing producers to determine their choice of crops within modest constraints, means that the outcome reflects comparative advantage. When taken in conjunction with the decision not to provide export refunds, this is coherent with the broader CAP objective of promoting the competitiveness of EU agricultural production, while also ensuring that supplies reach consumers at fair prices and help to promote downstream processing.

The retention of some safety nets should add value to the overall EU agricultural sector via market stabilisation and the maintenance of producer incomes; therefore it was unexpected to discover that price volatility was typically higher in the internal cereal market than in the world market, which casts doubt on the success of the measures in achieving the market stabilisation objective after the MTR.

There are other aspects of EU policy that conflict with the objective to promote market orientation. In the bioenergy sector, the Renewable Energy Directive provides incentives that are in addition to decoupled aids. The sharp increase in silage maize areas in Germany is a good example and thus does not add value to the sector as a whole.

In terms of sustainability, too, the reforms have added value. The environmental benefits of sustainable forms of production are, in a fully liberalised market system, externalities, which are not captured by producers. Hence, a free market will lead to sub-optimal levels of sustainable agricultural activities. The application of cross-compliance gave producers a clear incentive to adopt sustainable practices to a greater extent than would otherwise be the case.

1.5 Conclusions and Recommendations

The period reviewed was one in which many measures that were linked to cereal production under Agenda 2000 were phased out and replaced by decoupling, reducing possible biases in one crop over another. The MTR and Health Check also reduced the impact of measures that caused internal market prices to diverge from world market levels, but instead acted as safety nets if market circumstances changed dramatically for the worse.

This evaluation uncovered some unforeseen developments. The most surprising is the evidence regarding increased price volatility in the EU internal market versus the export market. The reasons for this are unclear, since price transmission from the world market to local prices and inside the EU appears to be good.

A more predictable development is the evidence that, even though commodity prices have been relatively high in recent years, there are still MS in which COP producers, on average, would have earned very low incomes in the absence of coupled and decoupled aids. These aids were vital in enabling such producers to maintain incomes in real terms in most MS, and hence slowed the development of an internationally more cost-competitive cereal sector.

Higher price volatility encouraged greater interest in price risk management, but so far only wheat futures have generated sufficient trading volume to create enough liquidity to handle large numbers of trades without resulting in distorted prices. This is an aspect in which a shifting of the responsibility for price insurance, (e.g. via the safety net provided by intervention stocks, import arrangements and the possible resumption of export

refunds), from official agencies to private institutions via market mechanisms is to be encouraged, but it is unclear how the Commission could assist in this process.

Within the COP sector, two of the most clear-cut examples of existing policy measures that are creating imbalances in the choice of crops are the continuing growth in oilseed areas, in response to biofuel demand. In the case of rapeseed, the area expansion has now reached a point where several EU regions are planting the crop at a greater frequency than is recommended in a rotation. GAEC conditions setting out the elements of cross-compliances have no specific guidelines regarding crop rotation practices, even though these are an important aspect of good agronomy. We would recommend, therefore, that on environmental grounds, the cross compliance requirements should include specific minimum rotational standards.

The second example of a lack of coherence in current measures is the emergence of green silage maize as a major crop in Germany, encouraged by national biogas incentives and which currently occupies 11% of the total UAA in the country. It is recommended that such excessive incentives for particular sectors that would not survive without special aids should be discouraged.

The cereal sub-sector that has faced the biggest challenge in adapting to the reform has been durum wheat. The sharp declines in plantings in many traditional areas confirm that significant areas were cultivated only because of the high specific coupled aids for the crop that were provided previously. Individual MS' application of Article 69 and 68 measures to durum wheat was clearly intended to soften the blow, but in terms of the longer-term objective of creating a more market-based sector, we would recommend that a time limit is attached to the provision of these sector-specific aids.