Agriculture and Rural Development Directorate-General

Evaluation of the CAP measures related to hops

Executive summary – 8 December 2009







This evaluation study contains both a description of the current situation in the EU hop sector in the international context and an evaluation of the effectiveness, efficiency, coherence and relevance of the Common Agriculture Policy measures related to the hop sector, in particular the effects of the CAP reform (decoupled aid as established by Council Regulation 1782/2003) on the hop sector.

The evaluation covered the period 2005-2007. It was based on an analytical framework consisting of various data collection and analysis tools. We present here briefly the methodological instruments that have been used during this evaluation:

1. The main databases:

- a. FADN (Farm Accountancy Data Network) provides data at the microeconomic level up to 2006, especially for Czech Republic and Germany. On hops, FADN provides information on the distribution of income of hops growers, share of subsidies in farm income and/or revenue of different crops in a region and over time. We used these data in our economic models and as statistics for time series;
- b. IHCG (The International Hops Growers Convention) databases includes figures on hops acreage, crops, alpha acid production, hops varieties produced and price levels of hops in member countries. This information has been used for analysis and estimations of world hops industry supply;
- c. The Barth Report and the Hopsteiner guidelines for hops buying report, and the Brewers for Europe website as well, provide several statistics and in particular an estimation of the total demand for hops and the demand for alpha acid;
- d. Eurostat data have been used to complement the analysis from other sources. On hops there are for instance indicators on the area of hops grown, trade in hops, and supply balance sheets;
- e. **DG AGRI** has provided several data on hops such as hops price (spot price and forward contracts) and subsidies.

2. The economic tools:

- a. The use of the Financial Economic Simulation tool (FES) allowed us to judge the effects of the CAP reform at the farm level for the most critical indicators, such as income, the extent to which equipment can be replaced in time and the perspectives to continue the farm from a financial point of view.
- b. The **Face-IT** tool has been used to judge the relative profitability of hops growing farms compared to farms growing alternative crops. The tool provides information on gross margin as well as the farm structure, including the fixed costs.
- 3. **Desk research** allows us to identify contextual elements, issues and existing studies related to relevant CAP measures. Desk research consisted of identifying, reading and analysing secondary data information sources such as CAP Regulations, policy papers, Commission reports, etc.

- 4. We have interviewed 43 persons in total (producers associations, traders and merchants, Ministries and Administrations, stakeholders at EU level). The **interviews** aimed at collecting mainly qualitative information and, if needed, quantitative information, too.
- 5. In order to increase the empirical evidences and to deepen the analysis, **case studies** were carried out in specific regions of the Czech Republic (Zatec Ustecky region), Germany (Hallertau region), Spain (Castilla y León region) and the United Kingdom (Kent region).

I Description of the situation in the EU hop sector in the international context

I 1 Hops production and supply in the EU

Hops production is a niche sector taking European agriculture as a whole, but it is important to certain Member States, notably Germany and the Czech Republic. Germany is one of the leading producers of hops worldwide, accounting together with the US for more than half of annual global production. Germany's share of EU production has been growing relative to the EU as a whole. The EU as such also accounts for more than half the area planted with hop worldwide despite a decline in the first half of this decade. However, recent plantings in the US make it likely that the EU share of world hops production will decline in the next few years.

In the last decade, the number of hops growers has been declining steadily in European hops-producing countries, but holding size – while varying considerably on average across the EU – has been rising. The ratio of areas sown to aroma and bitter varieties is around two to one. Yields and alpha acid production per hectare have increased significantly (but not constantly every year) since the beginning of the decade.

Demand is largely determined by the consumption of hops-based beers. Beer production rose significantly in the first half of the decade, but has stabilised since – with brewers competing strongly for market share and a wave of consolidation in the last twenty years. Europe accounts for around one-third of world beer production. Demand for hops not only depends on total beer consumption, however, but also on consumer taste: demand is shifting towards less bitter beers requiring lower hops content.

Hops prices, particularly on spot markets, are strongly influenced by the weather and by the level of stocks. Some 40% of world production is traded between countries. Trade is particularly important to the EU as Europe accounts for around 80% of world exports (excluding intra-EU trade) and some 50% of imports.

I 2 The policy framework in the EU

The Common Market Organisation (CMO) for hops was introduced almost forty years ago by Council Regulation No 1696/71 but the basis for the CMO as it currently functions was established by Council Regulation (EC) No 1952/2005. It introduced into the hop sector the principles of a major overhaul of the Common Agriculture Policy agreed in 2003, which was designed to replace product-specific aid, distorting planting decisions and making production supply- rather than demand-driven, by aid decoupled from production.

The CMO covers the role of producer organisations, the certification process as well as marketing and trade with third countries. Producer groups pool marketing, investment in varietal improvements, as well as production and marketing techniques. They handle certification of variety, quality and origin with a view to ensuring minimum quality thresholds, e.g. in terms of alpha acid content. Hops producers are not obliged to sell through a producer group, but the group has the right to monitor the selling price. If the producer group, judging the overall market situation e.g. from available contract information, considers the selling price unacceptable, it must buy the production itself and find a new buyer. The producer group (or another recognised body) keeps a register of contracts (and records subsequent deliveries) in order to provide information on the state of the market and prospects for development.

Decoupling

The objective is to make European agriculture including hops production more competitive and more sustainable, while continuing to make agricultural products available to consumers at fair prices. The decoupled aid has been linked to compliance with broader objectives of rural preservation, high environmental stands and animal welfare (cross-compliance).

Partial coupling

Direct aid for hops has been decoupled from production since 1 January 2005 for most Member States. However, in order to deal with "specific market situations or regional implications", Member States may retain a certain percentage of coupled aid (corresponding to a maximum of 25% of their national ceiling¹). This coupled aid is paid either to farmers or to producer groups. The provision of payments to producer groups aims at fulfilling the objectives of the producer groups, such as concentrating supply and stabilising the market by adapting the production to market needs.

¹ Council Regulation (EC) No 864/2004 (the so-called "Mediterranean package") that amended Council Regulation (EC) No 1782/2003

Complementary national direct payments (CNDPs)²

The CNDP provisions are valid for the new Member States only. These additional payments (*top-ups*) are financed in principle by the national budgets of the new Member States. However, the Member States has had the option for using the Rural development programme for co-financed CNDP for the first three years after accession. This opportunity was provided because direct subsidies will be phased in over 10 years from accession in the new Member States. They received 25 % of the full EU rate in 2004, rising to 30 % in 2005, 35 % in 2006 and 40% in 2007, then 10% per year till 2013. The period of full phasing-in in the case of Bulgaria and Romania will be accomplished in 2016.

Other measures and intervening factors

No Member State applied the provision of article 69: "Member States may retain up to 10 % of the component of national ceilings (...) corresponding to each sector referred to in Annex VI"³.

The common market organisation is not the only determinant of production and the structure of holdings. Other intervening factors include cross-compliance, modulation (the progressive reduction of annual aid amounts where annual direct aid exceeds €5,000), the way in which Member States implement the legislation, and a number of others −ranging from the spill-over benefits of general improvements in agronomic practice and the state of the economy, to changes in technology and the weather conditions.

II Evaluation of the CAP measures related to the hop sector, in particular the effects of the CAP reform

II 1 To what extent have the CAP measures supporting hops affected the production decisions of farmers in traditional areas?

Profitability and incentives to switch to other crops

Gross margins of hops growing appear to be very high compared to possible alternative crops. In almost all production regions, hop is the most profitable crop in terms of gross margin. With decoupling, producing hops has remained attractive compared to most alternatives, in particular to common wheat and sugar beet. Furthermore, the analysis of production trends indicates that there has been no decrease of production following decoupling.

Moreover, the difference in margins has to be significant to act as the catalyst for a crop switch because of the sunk costs, e.g. in machinery and trellises. The need for crop-specific knowledge and the necessity of specific soil and climate conditions limit switching.

Using the Face-IT model, it turns out that, in the case of Germany, the farm income of hops producers is more than twice that for a mirror group of the same farm type in the same regions and with approximately the same area but not producing hops. This is despite the higher capital costs and

² Art. 143 (c) of Council Decision 281/2004

³ Article 69 of Council regulation (EC) No 1782/2003

labour intensity of the hop sector. In the Czech Republic, average net farm income is 70% higher for similar mirror group.

When a different tool, namely FES, is used to isolate the income and costs relating only to hops production, breaking down the results for different groups by the degree of specialisation in hops, the result of a relatively high income for hops growing is confirmed. The income has not significantly been changed following the decoupling.

Effect of the measures on production

With respect to decoupled payments the hops producing countries fall in three groups: EU-15 Member States who have chosen partial decoupling (i.e. Austria, France and Germany) plus Slovenia, which falls into the same group; EU-15 Member States which have opted for full decoupling, i.e. Belgium, Portugal, Spain and the United Kingdom, and EU-12 Member States applying the SAPS scheme – the Czech Republic, Poland and Slovakia. According to our analysis there is a significant correlation in descriptive statistical terms between the degree of full decoupling (full and partial), on the one hand, and a decline in areas planted with hop on the other. There have also been sharp declines of hop area in the new Member States. However, it is likely that this is the impact of other intervening factors than the CAP measures combined with a declining area trend which started prior to the reform.

The role of producer groups in stabilising markets

The role played by producer groups in different countries varies. Some producer groups are well staffed and offer considerable administrative assistance as well as support for modernisation of hops gardens (loan facilitation), the introduction of new varieties and research of disease control for instance.

The size and source of the budgets of producer groups plays an important role. In Germany, the producers groups are receiving the additional payments of the 25% of the national CAP subsidies related to hops retained under the Council Regulation EC 864/2004 as explained above. According to the interviews outcomes, the work of producer groups in Germany is highly appreciated by government and market participants and particularly by their members (reflected by the fact that growers remain members even though membership is no longer mandatory) which supports the hypothesis that the hops growers would levy themselves to fund the producer groups if the current source of funding were withdrawn.

As a general rule, the larger the producer group, the greater its market power, when negotiating forward contracts. This ability to pool negotiating power in concluding forward contracts is one of the most significant contributions these groups have made to the stabilisation of the income of their members and of the market prices. This is an achievement as there is emerging structural overcapacity on the global hops market.

II 2 To what extent have the CAP measures supporting hops contributed to support the income of hops producers?

Effect on farm incomes

The analysis, with FES model, used three scenarios projected up to 2013: 1) support continuing under the pre reform system, 2) abolition of all income support and 3) full decoupling. The analysis for Germany includes only direct support as the amount of the retained coupled payment goes to the producer groups. In Germany, the results were most favourable for the total decoupling scenario and the scenario with the status quo before reform. However, there are wide differences in the change of income level from farm to farm following the reform (simulation for 2013): 20% of the hops growers are faced with an income decline of 20% or more, a very small group has received more income, but the majority of hops-growing farms receive similar incomes as before the reform. It has to be pointed out that the difference in income in two scenarios "before the reform" and "after the reform" in Germany is not caused by decoupling as such, but by the implementing model chosen in Germany (moving towards flat rate).

In the case of the Czech Republic, it was not possible to construct pre-reform scenario because of lack of data. The impact of abolishing support would produce negative income for around half the hops growers, so the support is critical.

Perceptions in three case study countries – Germany, Spain and the UK – are that the amount of support is small relative to total costs and that market factors are the predominant driver. In the Czech Republic however, CAP support is seen as critical for proportionally smaller hops farms.

Effect of full and partial decoupling

The Face-IT tool has been used to examine the net farm income of German hops gardens compared to equivalent farms not producing hops. The simulation shows that on average, in most years between 2000 and 2006, the profitability of the hops growing farms was better than that of their non-hops growing equivalents. There was no great change in relative profitability after the reform (i.e. in 2005 and 2006). There is evidence in our analysis, however, of an increase in net farm income dispersion following the reform. These could be related to the increase in hops area per farm as farms with lower incomes sell or lease out their hops gardens to larger producers.

II 3 To what extent have the CAP measures supporting hops induced structural changes of producing farms and changes in the geographical distribution of hops production?

Changes in farm structure

Farm structure varies greatly across the EU, but hops holdings tend to get larger and the degree of specialisation is increasing. This has been true for a number of years and in most hops-growing countries. However, it appears that growers move out of the sector, retirement being one possible reason. Small producers may also withdraw when faced with a major investment decision. These are

long-term trends and it would be perilous to try to establish a causal link with the 2004 CAP reform, particularly as the first major post-reform investment decision may not yet have been needed.

There is a correlation between the rate of decrease in the number of growers and full decoupling, but in practice market factors and the age pyramid appear to be the real reason for the decrease. Data on new entry is virtually non-existent, but new entry appears to be minimal. The 2004 reform did not modify the trend towards larger farms, but may have played a role in increasing specialisation because of the relative profitability compared to other crops which could be less profitable after the reform.

Modification of the geographical area grown to hops

The trend of acreage in traditional areas has followed more or less the national trend of acreage reduction, with a very few exceptions. The changes are responses to market and other conditions, including a shift in demand away from aroma varieties. CAP support is not a decisive factor.

II 4 To what extent have the CAP measures supporting hops contributed to ensuring sufficient levels of production with respect to the needs of the downstream sector and to what extent has it changed the geographical distribution of the latter?

The balance of supply and demand

Despite some stagnation in recent years, the trend of beer production has been increasing in Europe (and worldwide). The production of alpha acid, though volatile from year to year, is however stable overall. These are long-term trends. No robust causal link could be observed with CAP support measures, notably decoupling. It has been observed in the surveys and case studies that brewers appreciate the quality certification system of the CMO. According to the stakeholders, the latter is indeed an efficient way of beer quality control.

The spot/forward system

Forward contracts contribute to hops market stability. In most Member States, forward contracts cover at least 80% of production. Producer groups play a key role in facilitating this system, which brewers value for the relative guarantee of future supply. The system may exceptionally break down when the benefits of breach of contract outweigh the costs, e.g. on the producer side in times of shortage/ high spot prices, and for brewers when they merge.

Geographical distribution of the downstream sector

With hops representing approximately 1% of the beer costs, proximity to production is not a major determinant for the location of breweries, though in practice these are almost always located in the same country. However, proximity to other key production factors (certain types of water used by brewers) and to markets are perceived as more important. The industry also appears to be relatively conservative in its attitude to changing sources of supply except where they need to shift for economic reasons from aroma to bitter varieties.

II 5 To what extent have the CAP measures supporting hops contributed to stabilising markets and ensuring reasonable prices for supplies to consumers?

Concentration of supply in producer groups to reduce price volatility

Producer groups achieve market stability by a variety of means ranging from pooling to forward contracts. This moderates, but cannot totally eliminate, volatility in hops prices. Volatility does appear to be less in countries with strong producer groups, e.g. in Austria, Germany and the UK, and where contracts have a strong record of enforceability. Most EU producers are in producer groups, but the number of producer groups relative to the number of farms varies. Concentration is greatest in the Czech Republic (which has an equivalent organisation, but no official producer group), and in Germany.

Market concentration and price formation

In 2007, 15 brewers accounted for 70% of production worldwide, and there have been significant mergers since then. The process of concentration amongst the largest brewers can affect the purchasing strategy of several breweries, but no effect on price can be distinguished. This is probably because the price formation mechanism is affected by counter-effects such as the proliferation of smaller breweries, so that a net effect on prices cannot be singled out

Concentration in the top tier has affected demand for aroma varieties from large brewers. It made this a niche market for small brewers who make the variety a factor of differentiation leading to a higher price for specific consumers.

Relationship between retained stocks and price formation

Stock data are commercially sensitive in Europe (unlike the US where stocks are registered), but it appears that the brewing industry has recently been characterised by destocking as a cost-cutting measure. Destocking fosters the move to longer forward contracts. The uncertainty about the levels of stocks held by brewers and merchants is likely to mean that prices reflect a higher risk margin, but evidence for it is missing.

Il 6 To what extent is the objective of ensuring sufficient levels of production (quantity and quality) in traditional production areas relevant with respect to the needs of user industries (e.g. in terms of added value of local production)?

Availability of hops as a factor in location decisions

While the brewers' needs for hops are generally met via national markets, the cost of hops is too small in the brewers' total cost structure for it to be decisive in deciding where to locate their breweries. As our analysis shows brewery locations do depend to a minor extent to the availability of inputs but the water. There are EU countries without hops production which produce beer on a large scale, importing hops from other Member States, thus confirming the fact that other factors are more important.

Availability of hops in traditional production areas as a factor in production decisions

Certain beers are made only with varieties sourced in a specific region (and in some cases with a Protected Designation of Origin). This may influence the location decision of niche brewers, but is not a significant factor for large brewers, who may well change their source of supply as consumer tastes change, and who for mass consumption beers in any event source a mix of hops types.

II 7 To what extent have the CAP measures supporting hops promoted rural development in traditional production areas with respect to employment and economic viability?

Employment trends in traditional hops-producing areas

Full-time workers in the hop sector normally comprise the farmer and another family member, but as the farm generally grows other crops, it is difficult to quantify the requirements in annual work units of hops as such. There is evidence from Germany, however, that the number of annual work units on hops farms has dropped, but some of this is due to retirement. This trend has affected permanent employment most as larger farms use more seasonal labour. Simulations for France and Slovenia, where hops farm size, distribution by size class and level of technology is similar, show similar results.

The hop sector relies heavily on seasonal workers. In most countries, these come from the new Member States or from outside the EU. In the Czech Republic (to some extent) and Spain, the seasonal workers are local. In the former case, factors such as the exchange rate and visa requirements for non-EU nationals affect the availability of labour. The qualitative information sources suggest that the CAP measures have had a positive impact on seasonal workers as they kept an employment level, but this result must be treated with great caution as the link is probably in fact with market stability, rather than decoupling. According to interviews with hops stakeholders, there are parts of the EU, notably in the Czech Republic, where the hop sector may contribute to preventing depopulation of specific rural areas.

The change in production structures (larger holdings, a dwindling acreage overall) is likely to be having a negative effect on employment but its magnitude is difficult to assess as various factors could impact the employment rate in the agricultural sector.

Economic viability

As illustrated previously, CAP support payments make only a limited contribution to economic viability. The sector is relatively profitable compared to other crops and produces high incomes in relative terms, but it is subject to structural oversupply creating competitive pressures, while costs are high. Growers are leaving the sector, but the split between those driven out for economic reasons, if any, and those leaving because of retirement is not clear. The fact that the sector may be intrinsically unattractive may be confirmed by the fact that there are very few new entrants. Moreover, certain costs, e.g. labour, energy and diesel fuel, are rising faster than prices, contribute to reduce the gross margins over the last five years. The increase of these costs does not concern only the hop sector, however, as hop growing is a capital intensive crop, it may be relatively more important.

Decoupling (whether full or partial as a transition to full decoupling) does not appear to be a key factor affecting economic viability of farms as such.

II 8 To what extent have the CAP measures applicable to the hop sector after the 2003 reform been efficient in achieving the objectives of these measures?

Efficiency in producing a fair standard of living for producers

The CAP support to the farmers' income aims at providing them with a fair standard of living. The decoupled aid is in that context more efficient than the aid linked to production. They both provide the farmers with similar amount of money (according to our analysis with FES applied to Germany) but decoupled aid does so with lower cost for the farmers: after the reform the latter do not have to provide the Commission with all information on their production and thus save time and money.

Efficiency in enhancing competitiveness

The hop sector has been market-oriented for years. Price is one of the keys to competitiveness, but producer price formation depends on many more factors than CAP measures, and these factors are much more important to price formation. Decoupling has not played a significant role in enhancing competitiveness - this CAP objective for hops was already reached before the reform - so its efficiency is in that context neutral by definition. Producer groups related to hops production contribute to competitiveness through pooling and quality improving. They already existed before the reform and their activities supporting the sector are generally the same as before the CAP reform.

Efficiency of market stabilisation and reasonable consumer prices

Producer groups manage to regulate the supply and price volatility mainly by forward contracts and by hops pooling and buy-backs. They appear to be an efficient way to achieve the objectives but producer groups already existed before the reform and their activities supporting the sector are generally the same as before the reform.

Efficient promotion of a more market-oriented and sustainable agriculture (economic, social and environmental dimensions)

The hops market has always been intrinsically market-driven and this remains the case. The efficiency of CAP measures is neutral in promoting a more market oriented agriculture.

Agriculture as a whole is becoming more environmentally friendly, and in the hop sector new varieties require less intensive production methods.

As the aid is not enough to be a primary influence on production decisions, though key in some cases, any link with decisions affecting sustainability is weak.

II 9 To what extent have the CAP measures supporting hops contributed to (or counteracted with) achieving a simplified and effective administration and management?

Administrative burden

The administrative burden for producers has decreased significantly under decoupling as much fewer data have to be collected by farmers. This is less true in countries with partial decoupling. It is also not necessarily true for the new Member States applying the SAPS, and is particularly not true for the Czech Republic, where compliance costs related to CAP application for acreage payments relies on the producers themselves as they are not assisted in this task by the equivalent of the producer group. The administrative burden for the national authorities is also less under decoupling, though some of this is the result of digitalization of the aid application process.

Contract registration cost

Any contract to supply hops must be registered which takes place by the sending of hard copies to the national authorities. This applies both to forward and spot contracts. National authorities forward aggregate data to the European Commission annually. The benefits of registration are seen as statistical rather than commercial. Despite the fact that the registration is not seen as burdensome, it is seen as controversial among stakeholders as data can be used to deduce commercially sensitive data such as reduction of the number of market players. If the only purpose of the registration is to provide "informative" statistics, we can consider this provision as inefficient.

II 10 To what extent have the CAP measures supporting hops coherent with the objective of a more competitive and market-related agriculture promoted by the 2003 CAP reform?

Increased competitiveness

The relative position of the EU in the hops world market is declining. The EU-27 is still the largest hops producer worldwide, but its share is shrinking compared to the US and China. The need to improve competitiveness is recognised by large producers, but the constraint of smaller farm size in the EU is difficult to overcome. Decoupling provides more freedom to switch crops, but the incentives to do so are weak since the decoupled aid is a small factor in decision-making compared to the relative profitability of hops and the sunk costs. The EU hop sector lags in yields, and also lags its competitors in making new investments. There are not enough data to provide an adequate explanation why investment in technology and mechanisation is lower than in the US. Some producers would welcome more investment incentives. Pooling resources, where it exists, appears to be a relevant solution to greater competitiveness. There are very little new entries, thus confirming the likelihood that the hop sector is unattractive, probably due to the original significant investments that a hops farm establishment implies compared to its economic viability and to other agricultural activities.

Productivity

Productivity in aroma hops has improved in the EU in the last years. This is not due to the CAP, but rather to the European producers responding to market incentives and trying to catch up with the US. New varieties are helping. However, the picture is not uniform. Germany (which invests heavily in R&D) has overtaken the US, but other countries lag behind, though in some cases there is a deliberate trade-off between yield and quality. There is considerable scope for more R&D.

Agronomic improvements

There are models in the EU hop sector for technological innovation, notably in varietal improvements such as dwarf varieties. These varieties have been successful in the UK. They are more cost-effective to harvest and there are efficiency gains in checking for pests and spraying. This could be crucial in an industry suffering from lack of renewal in harvesting and processing machinery by small producers who have problems of access to finance.

II 11 To what extent have CAP measures supporting hops affected the environment?

Effects from irrigation

New irrigation methods for hops cultivation are environmentally friendly because they require less water – particularly when used with new varieties, but the adoption of both is unrelated to the CAP measures. Moreover, some producers who do not irrigate now need to do so in the interests of competitiveness, and thus the use of water potentially might increase.

Abandoning of land

While the total land area planted with hops is decreasing, it does not appear that the land has been abandoned. It seems that it has been used for new crops or consolidated with other hops gardens.

Fertiliser and pesticide use

Interviewees showed a clear awareness of the negative effects associated with fertilizer and pesticide use and an understanding of the reasons for cross-compliance measures. However, it is not possible to establish a link between the amount of fertiliser or pesticide used and the reform measures, or other factors, such as a reduction in area or rising fertilizer costs. Nevertheless, interviewees have mentioned a remarkable decrease in the use of pesticides, also due to the introduction of more resistant hops varieties. In particular they have pointed out a more responsible approach towards spraying nearby water courses and inhabited areas. However, without specific data collected, this information cannot be verified.

Recommendations

We recommend that:

- the EU continues the provision of income support through decoupled payments instead of coupled aid as the former is in the hops sector more efficient and allows a better orientation for investment decisions.
- in order to increase market stability and to safeguard farmers' incomes, organisations of producers keep on stimulating on behalf of their members the concluding of forward contracts.
- the sector uses and develops instruments fostering investment and innovation in order to promote the structural change needed for increased international competitiveness and productivity.
- producer groups continue making farmers aware of the environmental implications of their production decisions, such as fertilizer and pesticide use.
- the EU and the Member States continue their efforts to ensure that the administrative burden of the CAP measures relating to the hop sector is reduced in all producing EU countries.