



Evaluation of Common Agricultural Policy Measures regarding the Cotton Sector

Executive Summary

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Executive Summary

This summary presents the main results of the evaluation of support measures for the cotton sector, the objective of which was to measure the impacts of the measures implemented after the 2006 reform and established in the Council rules (EC) 73/2009 and 637/2008.

Through six questions, the evaluation dealt with the effectiveness, efficiency, relevance and coherence of the measures. It covered the three producer countries (Greece, Spain and Bulgaria) over the period that followed the 2006 reform.

The results concerning Greece and Spain are presented after a summary of the context of the sector and its regulations. A distinction is made between the 2006-2008 phase (Phase 1 of the reform) and the period after 2008 (Phase 2). The case of Bulgaria is presented using a different approach, due to the small size of the sector there. Finally, recommendations are made based on these findings.

1. DESCRIPTION OF THE SECTOR

Cotton is grown mainly for the production of fibres for use in the textile industry. Cottonseed, which is produced from ginning seed cotton, is also used in the form of cakes for animal feed, and sometimes in the form of oil for human consumption or the production of cosmetics.

Cotton fibre is a basic agricultural commodity, whose world production is dominated by China, India, the United States and Pakistan. Their production alone represents nearly 75% of world production. Since 2011, the world market price for the fibre has been strongly impacted by the stockpiling policy practiced by China, which in 2013-2014 controlled 60% of world stocks.

The European Union produces around 400,000 tonnes of cotton per year, or around 1% of world production. While a minor player in this sector, it is nevertheless ranked 5th among exporting countries of ginned cotton. The majority of European production is currently exported, in particular to Turkey. Currently, only three Member States grow cotton, on a total planted area of around 350,000 ha. Greece is the foremost producer country, with 85% of European planted area. It is followed by Spain (mainly Andalusia), with 15%. Bulgaria produces cotton on 400 ha. Production ended in Portugal before the reform.

2. REGULATORY CONTEXT

Protocol 4, annexed to Greece's Act of Accession to the European Union and supplemented by Protocol 15 of Spain's accession, recognises the importance of cotton production in certain EC regions and justifies the need for a support scheme for the sector. The objectives of this scheme are to (1) support cotton production in the EC regions where it is important for the agricultural economy, (2) enable fair income for the producers concerned, and (3) stabilise the market through the improvement of structures at the supply and marketing levels. All the agricultural policy regulations must respect these objectives, all the while conforming to the overall objectives of the Common Agricultural Policy (CAP).

The cotton-sector support regime previous to the 2006 reform was based on a minimum price of around 1 €/kg of unginning cotton for the cotton producers. This price was respected by the ginners, who in compensation received aid. Guaranteed maximum quantities limited the volumes that could benefit from aid.

In 2004, this regime was reformed in order to improve its coherence with the 2003 CAP, all the while respecting the objectives of the Protocol 4. This new scheme, which was applied from 2006, consisted of a decoupling of 65% of aid (incorporated into the single payment scheme) and coupled support of 35% for the planted area (crop-specific aid for the sector). In order to limit the planted area provided aid, national base areas were established for each Member State.¹ The Member States had to authorise the planted areas eligible for growing cotton, and they could determine the agronomic practices in order to limit its environmental impact. The regime also encouraged better organisation of value chains through the setting up of inter-branch organisations.

¹ Initially 370,000 ha in Greece and 70,000 ha in Spain.

Following a Spanish complaint to the European Court of Justice, the reform was annulled in September 2006, due to infringement of the principle of proportionality.² If partial decoupling was maintained, changes were made:

- crop-specific aid was made dependent on an obligation of harvest for producers;
- the national base areas were decreased;³
- restructuring schemes in Greece and Spain were funded, in order to enable the sector – and especially the ginning sector, which has acknowledged overcapacity – to adapt to the decoupling of aid and to gain in competitiveness. These plans included five types of aid that could be implemented optionally according to decision by the Member States.

The table below shows a summary of possible aid to producers in Greece and Spain.

	Greece		Spain	
Decoupled aid	966 €/ha	100% of areas	1 358 €/ha	100% of areas
Crop-specific aid	From 534 to 806€/ha	100% of areas	1190 to 983€/ha	100% of areas
Restructuring programme	AGRO Integrated Production: 15-20€/ha	~50% of areas	Aids for dismantling the industries	
Agro-Environmental Measure (AEM)	Nitrates AEM ⁴ : 370€/ha	~10% of areas	Integrated production ⁵ : 320€/ha	74 to 61% of areas
Article 69/68	-		563€/ha to 224€/ha	45 to 89% of areas
Ave. per ha (source: RICA)	~ 1 200 € in Macedonia ~ 1 400 € in Thessaly		~ 2 000 € in Andalusia	

Source: Agrosynergie

3. EVALUATION METHODS

The methodological approach of the evaluation was based on a theoretical analysis of how the measures work, which makes it possible to put forward hypotheses on their effects. It was followed by quantitative and qualitative empirical analysis, whose findings are directly compared with the theoretical hypotheses and which enables an assessment to be made.

The main sources of quantitative data are the statistical databases of Eurostat and of national statistical institutes (Elstat and Junta de Andalusia), the RICA database, ICAC's survey on production costs, as well as a survey conducted by Agrosynergie at plants. Three case studies were carried out in Andalusia, Thessaly and Bulgaria. They consisted of desk research and numerous interviews with institutional and economic operators of the value chain. These are the main source of the qualitative data used.

4. CONCLUSIONS CONCERNING GREECE AND SPAIN

4.1. Effects on the production of unginned cotton (planted area, yield, quality, volumes)

Concerning the planted areas, the decoupling led to a relative drop in the profitability of cotton compared to COPs⁶ and other alternative crops peculiar to certain areas. This had a dual effect: on the one hand, land where cotton is grown decreased on average by 17%, leading to a loss of 50,000 ha (planted areas reached 400,000 ha in 2014); on the other, the planted areas became more variable and are now sensitive to the fluctuations in the world market prices of cotton. Despite the decrease in planted areas, crop-specific aid is essential to maintain the latter: in the event of total decoupling, nearly 65% of planted areas would have disappeared.

The national base areas and the adjustment of the amounts of aid if these areas are exceeded help to regulate the areas planted in cotton, especially in periods when its price is high. On the other hand, the rules for land authorisation and for agronomic practices were established in a very

² The European Court of Justice has concluded that during sketching up the new support regime, the Council and the Commission did not take all the necessary steps for evaluating the effects of the new instruments on the profitability of the cotton or on the viability of ginning sector.

³ 250,000 ha for Greece, 48,000 ha for Spain and 3342 for Bulgaria.

⁴ Agro-Environmental Measure "Nitrates reduction" is a voluntary measure promoting lower use of fertilizer, water, on cotton, in nitrate vulnerable zones.

⁵ Integrated Production Agro-Environmental Measure is a voluntary measure implemented as an incentive for Spanish producers to adopt practices more respectful of the environment : ban of plastic cover, ban of irrigation by flooding, rotation, etc.

⁶ Cereal crops, Oilseeds and Pulses.

unrestrictive way by the Member States, because, according to the authorities, extra restriction was not justified. For example, in Greece, all agricultural land is acceptable, and in Spain authorisation is given to land on which cotton was grown at least once during the 2000/01, 2001/02 and 2002/03 seasons. With regard to agronomic practices, no specific rule was established. As a result of these national choices, these elements had no impact.

Concerning the yields of cotton per hectare, the reform and an integrated production Agro-Environmental Measure in Spain promoted a change in the production system: it became less intensive, leading to a 36% drop in yields between 2005 and 2014. In Greece, during Phase 1 of the reform, the fact that there was no obligation to harvest caused a drop in yield. The requirement to harvest, which was applied in 2009, and above all the rise in cotton prices reversed this process and led to an increase in yields of 13% compared to 2005 levels.

Concerning the volumes, the combined effects on the planted areas and yields, as well as on the evolution of the market, led to a net reduction in the production of ginned cotton. Between 2005 and 2008, production decreased 49%, to reach 237,000 tonnes at the lowest. The decline was most pronounced in Spain (-84%) and less in Greece (-38%). In Phase 2 of the reform, the requirement for harvest as well as the climb in cotton prices from 2010 furthered a recovery in production in Greece (330,000 ton in 2014) and in Spain (61,400 ton in 2014).

Concerning the quality of unginned and ginned cotton, the reform had only indirect effects, related to the change in production system in Spain (adoption of a short-cycle variety, and thus with shorter fibres but with less plastic residue, etc.). The Member States did not seize upon the restructuring-scheme measures to improve quality. Improvement of quality, in both unginned cotton and ginned cotton, is in fact not perceived as an important issue for the value chain. Nonetheless, the Spanish authorities set up coupled aid for the sector based on criteria of quality, within the framework of Article 69 of the Single CMO Regulation.⁷ However, the analysis showed that the criteria established for this aid (humidity less than 12% then 11.5%, and quantity of impurities inferior to 5%) are the 'minimum' criteria for quality, and this measure acts more as support for the sector than as real incentive to improve the quality.

Concerning the geographical location of unginned cotton production, all the production zones in Greece were maintained. The drop in planted areas seems to have affected the production areas homogeneously. In Spain, however, the Murcia production area disappeared completely, and in Andalusia production has become concentrated in the more traditional areas (Lower Guadalquivir, lower area of Cordoba, south of Seville and Cadiz) as well as in the areas where the alternatives to production were more limited.

Despite an average drop in planted area, the support instruments, especially crop-specific aid to cotton, and to a lesser degree the other aids (Article 68/69 and Integrated Production Agro-Environmental Measure in Spain, clearly contributed to supporting production in the traditional regions, i.e. Greece and the Western zone of Andalusia. The context of high market prices, which may be only temporary, also explains why production has been maintained.

4.2. Effects on income and the regional economy.

In terms of farmers' income, the single payments as well as the coupled aid seek to directly maintain a fair income for producers. They have been effective on this point and have contributed to maintaining family income by FWU⁸ for farms specialised in cotton production, compared to the two years preceding the reform (except in Thessaly), and this despite the drop in production. After the 2006 reform, the total amounts of aid received by farms specialised in cotton were, on average, about 1,400 € per hectare per year in Thessaly, 1,200 € in Macedonia and 2,000 € in Andalusia. They thus represent an essential proportion of producers' income, largely superior to 100%, and varying over the period from 84 to 301% according to the area and year (source: RICA⁹).

Nevertheless, significant variability in revenue can be found; this can be explained by the variations in yields and in those of the producer price, which, since the reform, has been directly

⁷ Article 68 of Regulation 73/2009 which followed Article 69 of Regulation (EC) n°1782/2003: the basis of this article, the Spanish decree 202/2012, sets up a national programme to encourage the production of quality cotton, the 'Programa nacional para el fomento de la calidad del algodón'.

⁸ Family Work Unit

⁹ Farm Accountancy Data Network (FADN) is a accounting agricultural database, representative of professional farms in the European Union.

established according to the world market price. The RICA data show greater variability in Spain than in Greece, possibly due to greater variations in yields.

In terms of jobs and regional economy, the reform has had a dual effect. A simulation carried out on the RICA data show that nearly 15,000 FTE¹⁰ in the agricultural sector and more than 1100 in the industrial sector have been maintained by the current system of aid to the sector, compared to a counterfactual situation of total decoupling. At the same time, all these jobs remain heavily dependent on the continuation of European aid.

The reform has moreover caused loss of jobs. In the agricultural sector, this is due to extensification (the giving up of technical acts requiring labour) and the giving up of cotton for more profitable crops that require less labour. Between 2004 and 2011, these losses are estimated at around 8% in Greece and 16% in Spain. In the ginning sector, the aid measure to dismantle ginning units led to the disappearance of 170 full-time and 600 casual jobs in Spain, this occurred in a context of economic crisis in which the redeployment of workers may have been difficult.

4.3. Effects on the structures of production

The partial decoupling required the entire value chain to restructure, given the size of the coupled support. Several instruments could accompany this restructuring: **Rural Development Regulation instruments at the agricultural stage, and the restructuring-scheme instruments introduced in 2008 for the entire value chain.**

Greece chose to focus its restructuring scheme on the development of integrated production (AGRO aid). The more ambitious Spanish plan led to dismantle the 19 ginning facilities and provided aid to machinery contractors impacted by the dismantling. Spain also chose, from 2006, to use Article 69 of Council Regulation (EC) n°1782/2003, for promoting the quality of cotton. It also introduced an "integrated production" Agro-Environmental Measure for the 2007-2013 plan, which stirred up strong interest among producers. The interest is due to the amount of aid, which acted as an incentive, and the coherence between the specifications of the integrated programme and the need for the producer of reducing production cost.

The reform of the aid regime furthered a big decrease in the number of farmers producing seed cotton (-44% in Greece and -29% in Spain between 2005 and 2010), without nonetheless impacting the productivity of the sector through the disappearance of a particular type of farm.

At the ginning level, aid for dismantling contributed to a fourfold reduction in Spain of the country's processing capacities. This led to significant improvement in rate of use (67%) and, because of this, in productivity. However, some efficient facilities were dismantled in areas where producers have ceased production. In Greece, there was no significant change linked to the reform.

Finally, few improvements were noted in the **structuring of the value chains as a whole**, even though this point represents an issue for the sustainability of the sector. The increase in crop-specific aid to cotton subject to membership in an inter-branch organisation did not enable the emergence of long-lasting inter-branch organisations having a structuring role.

4.4. Effects on the downstream sector

Besides the closing of facilities in Spain, the sector was strongly impacted by the effects of the reform on the volumes of cotton. The ginning facilities are totally dependent on local production of European cotton. In this respect, the maintaining of coupled support and the requirement for harvest are together essential for the ginning sector.

The reform had a weaker effect on the textile sector, as European production is very limited. The most visible impact concerns the Turkish textile industry, for which imports from Greece are by no means insignificant.

¹⁰ Full-time equivalents

4.5. Effects on the environment

At the agricultural level, the environmental issue is very important, due to the negative impacts of cotton growing, as much on water resources as on biodiversity and soil quality. Two instruments had environmental objectives: land authorisation and the rules for agronomic practices. In both Greece and Spain, these were defined in a very unrestricted way (eligibility of almost any land and no requisites for agricultural practices), with the result that they did not have the expected effects environmentally. On the other hand, the other instruments, which were linked to planted areas, did have effects. These were often furthered by the Agrio-Environmental Measure.

1. Effects on practices: by taking into account the fact that the majority of planted areas are in Greece, the measures led to a temporary reduction in environmental pressure, due to the extensification of practices during Phase 1. In Spain, where the extensification has been more long-term, we can suppose that the positive environmental impact is continuing. The measures of the second pillar have moreover contributed to mitigating the environmental effect of the crop in Spain. In Greece, the AGRO programme has specifications that are judged not to be very relevant and that do not allow for effectiveness.

2. Effects of replacement of the cotton by alternative crops: as cotton is a rather polluting crop¹¹, its replacement by another crop is generally rather an improvement in terms of the environment. However, the effects are limited overall, because the alternative crops remain irrigated crops that are often intensive due to the small size of the farms. In 2004, such substitution concerned only 17% of areas planted in cotton.

4.6. Efficiency, relevance and coherence

The efficiency of the support system for the sector has been improved. The partial decoupling in particular reduced the extent of checks and red tape. The price support in particular required the presence of 5 to 6 inspectors per facility to monitor each delivery. However, in Spain, maintaining the aid provided within the framework of Article 69 has continued to require the presence of inspectors in the ginning facilities, for 100% of the cotton deliveries.

In terms of relevance, a SWOT12 analysis of the sector's issues at the time of the reform, directly compared to the objectives of the reform, allows us to conclude that the objectives were appropriate. On the other hand, as the conclusions regarding the effectiveness show, the instruments were able to respond only partially to certain issues (improvement of competitiveness, more sustainable production, and environmental protection), essentially due to the options adopted by the Member States in their restructuring schemes. The implementation of the reform in fact responded mainly to one of the objectives of Protocol 4 of Greece's accession, which was to 'support cotton production in the European regions where it is important for the agricultural economy'. However, when it comes to respect for this commitment, the sustainability of systems is not taken enough into account; in particular, competitiveness and the preservation of the environment have not been improved by the measures established.

Regarding the coherence of the systems:

- The objectives of the CAP support measures related to the cotton sector are coherent with those of the 2003 CAP. However, here as well, their implementation has been only partially coherent, due to the methods adopted by the two Member States, especially for the preservation of the environment and improvement of competitiveness. Regarding this latter, results have been achieved at the agricultural stage, essentially in Spain, mainly via a drop in costs enabled by the extensification of practices. The Integrated production Agro-Environmental measure encouraged ambitious changes, which was the result of the sector's desire to make this change. The decoupling alone would not have been enough to produce these results. Downstream, the instruments were not enough to further the expected restructuring; this highlights the need to strongly organise the value chains as well as the desire of the sector to seize upon the instruments proposed by the European Commission.
- The objectives of the measures, just as in the case of the implementation of the instruments, were on the other hand only partially coherent with the Europe 2020 Strategy for a smart, sustainable and inclusive economy (defined after the 2006 reform). Besides

¹¹ Alliance Environnement: *Evaluation des effets des mesures de la PAC dans le secteur du coton*. 2007.

¹² Strengths, Weaknesses, Opportunities, Threats

the theme of jobs, no objective dealt with the issue of climate change and energy, or with innovation and R&D. The results could nevertheless have been achieved through restructuring schemes, but the Member States did not use them for this purpose.

- Finally, with regards to coherence with the international agreements, despite the EC's insignificant position in terms of production on the world market, the decoupling of European aids is a sign of the EU's commitment to reduce measures with distortion effects on markets.

5. RESULTS CONCERNING BULGARIA

The cotton sector in Bulgaria is of an extremely small size (400 ha of cotton and 10 to 12 producers in 2012, and one ginning facility). Cotton is grown there in an extensive fashion and without irrigation. The yields per hectare are thus very small. The producers currently receive no crop-specific aid for cotton, and, according to the interviews, the objective of the value chain is to maintain the sector up to the implementation of this aid from 2015. The relevance of such support in so small a sector is questionable.

6. RECOMMENDATIONS

Two types of recommendations can be made.

Recommendations on reforming CAP measures taking into account past implementation

- The current agricultural policy measures regarding cotton are the result of a compromise between the 2003 CAP, for the improvement of agricultural competitiveness and its orientation by the market, and the commitments made at the time of Greece's accession to 'support cotton production in the European regions where it is important for the agricultural economy' (Protocol 4).

The fact that this commitment to Protocol 4 has been respected is the main success of the reform. On the other hand, "improvement of the structures, at the level of supply and marketing", which was the second objective included in Protocol 4, was not sought after, at least in Greece, which is the main producer (85% of EC volume).

- This result is detrimental to the other commitments by the Member States and to the issues of the value chain, especially the sustainability of systems, which is part of the Europe 2020 Strategy, i.e. the competitiveness of value chains and the preservation of the environment (also aimed at by the CAP). While remaining in accordance with the framework of Protocol 4, the CAP measures for the cotton sector should not ignore these two fundamental aspects of sustainability. The results show that simple decoupling of aid is far from sufficient for improving the viability and competitiveness of the sector, even if it creates the conditions for it. Instruments that act as incentives but that also restrict restructuring are necessary. If results regarding the improvement of the sustainability of the Greek sector had been desired, it would have been useful to require changes – for example, by making the payment of aid subject to industrial restructuring, or by involving the operators in the funding of the restructuring (based on the model of the sugar CMO reform), or by making sure that the environmental constraints that were part of the support measures were coherent and effective.
- Nevertheless, the principle of subsidiarity to accompany the restructuring processes, via national restructuring schemes, cannot be put into question. Indeed, the national level remains essential for defining certain methods adapted to the specific characteristics of value chains. The European regulations must nonetheless provide a sufficiently restrictive framework so as to weigh on the political balances within the value chains, limit the deadweight effects and achieve the minimum objectives sought after.
- In order to improve the environmental record of the crop in both Greece and Spain, only incentive systems were used, thereby limiting results. The possibility of two approaches (incentive and constraint) is important, but the European regulatory framework must ensure that the minimum objectives sought after are achieved. More specifically, the validation of the restructuring programmes should better assess the expected impacts, and monitoring of implementation and results could be included.

Recommendations for the future of the support system to the cotton sector

- The approach adopted, of partial decoupling at a rate of 65% combined with aid for cotton growing that includes a requirement for harvest, is an acceptable compromise between the commitments made by the EU in Greece's accession protocol and the objectives of the 2003 CAP.
- The priority given to 'support cotton production in the European regions where it is important for the agricultural economy' (Protocol 4), makes it possible to maintain agricultural and industrial jobs that would be lost if cotton were to disappear.
- However, the results in terms of sustainability of mode of production show that significant efforts remain to be made by the cotton value chain, especially in Greece, in order to improve coherence with the objectives of the current CAP. This would in particular involve revising the AGRO specifications so that more ambitious results are achieved.
- Finally, insofar as there are plans to continue partially coupled aid at least until 2020, and given the high cost of this support regime, the European Commission could consider demanding the following:
 - More effective measures to improve the environmental record of the crop and thereby better respond to the evolutions of society's demands; in particular, conditions for access to crop-specific aid could be established.
 - Also, support for the organisation and collective action of the value chain, in order to enhance the value of its product via standardisation of quality and promotion on the world market, etc., as well as the competitiveness of the sector. Indeed, for the value chain to continue, in the short term it must be able to resist the fluctuations of world market prices, and in the medium term it would be worthwhile improving competitiveness for the sector to continue, possibly, in a context of reduced direct supports.

