



# **Evaluation study of the payment for agricultural practices beneficial for the climate and the environment**

Executive summary EN



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## OBJECTIVE

The objective of this evaluation study was to carry out an evaluation of the payment for agricultural practices beneficial for the climate and the environment ('greening measures') under the Direct Payments Regulation, part of Pillar 1 of the Common Agricultural Policy (CAP)<sup>1</sup>. It covers 17 evaluation study questions (ESQs) relating to: the drivers of Member States' and farmers' implementation choices as well as the effects of the measures on farming practices and production; effectiveness (in relation to environmental and climate objectives); efficiency; coherence; relevance; and EU added value.

## WHAT ARE THE PILLAR 1 GREENING MEASURES?

The 2013 CAP reform introduced into Pillar 1 a payment for a compulsory set of 'greening measures', accounting for 30% of the direct payments budget. These measures are intended to enable the CAP to be more effective in delivering its environmental and climate objectives and to ensure the long-term sustainability of EU agriculture by safeguarding natural resources and achieving more balanced economic and environmental performance. Three practices must be used to fulfil this requirement:

- **Crop diversification** – the cultivation of a minimum of two or three crops on arable land above certain size limits (to improve soil quality primarily);
- **Maintenance of permanent grassland** – to limit declines in the ratio of permanent grassland to total agricultural area to less than 5%, as well as to designate the most environmentally sensitive permanent grasslands (ESPG) and protect them from ploughing (to support carbon sequestration, protect species and habitats of biodiversity value, protect against soil erosion and improve soil quality); and
- **Ecological Focus Areas** (EFA) – to manage at least 5% of the arable land of farms with more than 15 hectares of arable land as an EFA, comprising a combination of management practices or landscape features as set out in the regulation and applied by Member States (to safeguard and improve biodiversity on farms primarily).

In addition, practices that are similar to greening and that yield an equivalent or higher level of benefit for the climate and the environment can also be used to fulfil the greening requirements.

While the greening payment is granted to the whole holding (including permanent crops), the obligations apply only to arable and permanent grassland areas. There are several exemptions, including a blanket exemption for those participating in the Small Farmers Scheme. Organic farmers benefit from the greening payment *ipso facto* without having to demonstrate compliance with the three greening practices. Land managers farming land in areas covered by the Birds, Habitats or Water Framework Directives are required to comply with the greening measures insofar as these are compatible with the requirements of these directives. Each measure has a suite of requirements and rules determining the area of land on the holding to which the obligations apply and the detailed rules pertaining to the implementation of each measure.

In 2016, holdings subject to one or more greening measure covered 78% of all utilised agricultural area. In relation to arable land, 75% is covered by holdings subject to the crop diversification measure and 70% by those subject to the EFA measure. A further 5.6% of utilised agricultural area (UAA) is farmed organically and so treated as 'green by definition'. Behind the aggregated EU figures there are significant differences between Member States.

## METHODOLOGY

The starting point for the evaluation was the development of an intervention logic for the greening measures, focussing on their contribution to the CAP's general objective 'sustainable use of natural resources and climate action'. Answers to the ESQs are based on the analysis of data derived from: notification information submitted to the European Commission by Member States on how they have applied the greening measures and data on farmer uptake in 2015 and 2016; cropping statistics from Eurostat, data from the Farm Accountancy Data Network (FADN) and a sample of Integrated Administration and Control System (IACS) data where it could be sourced; literature reviews on the effects of farming practices associated with the CAP greening measures on biodiversity, water, soils, climate mitigation and adaptation and ammonia emissions; a survey of national authorities and interviews with farmers providing information on the additional public and private costs associated with greening; ten case studies carried out in Austria,

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<sup>1</sup> Chapter 3 of Title III of Regulation (EU) 1307/2013

Czech Republic, France, Germany, Latvia, the Netherlands, Poland, Romania, Spain and the United Kingdom, involving statistical data collection; documentary research and interviews at national and regional level with key stakeholders including farmers, farm advisers and Government officials. These data have been analysed using a variety of tools and assessed against the counterfactual situation without the greening measures in place, which is taken to be the situation in 2014.

## DRIVERS INFLUENCING IMPLEMENTATION CHOICES

The first part of the study investigated the reasons behind Member States' decisions on how to apply the greening measures where they had flexibilities to do so, as well as farmers' implementation choices (ESQ1). For Member States, administrative issues appear to have been a key factor. This includes ensuring the measures are straightforward to implement, reducing administrative burden as well as avoiding mapping errors and risks of disallowance. Environmental priorities were not a major factor, although they did feature to a small extent in some of the case study countries (AT, CZ, DE, NL, UK-Sc). Equivalent practices were not extensively used, mainly because the requirements and approval process were considered too complex.

Substantial information and advice was put in place for farmers by Member States but mainly covered administrative issues rather than the environmental objectives and potential benefits of the measures with some exceptions. The key factors driving farmers' decisions on how to implement the greening measures were: minimising the risk of non-compliance and penalties, while avoiding administrative complexity and burden; as well as the degree of fit with existing farm practices and other CAP instruments (e.g. coupled support) or the requirements of cross-compliance and other legislation, such as the Nitrates Directive, to minimise any changes in practices or additional costs.

## EFFECTS OF THE MEASURES ON FARMING PRACTICES AND PRODUCTION

ESQs 2-4 examined the effect of the three greening measures on farming practices in the EU28 and ESQs 5 and 6 then investigated the effects of the measures on agricultural production and the economic viability of farms.

**Crop diversification (ESQ2):** The evaluation sought to determine the extent to which the crop diversification measure has resulted in more diversified cropping patterns and rotations. Monocropping is predominant in a few countries and regions in the EU (Italy, Romania, Spain, Poland, north-western Germany and south-western France) and mainly associated with the cultivation of wheat, maize, barley and oats. In the ten case study Member States, in 2014 19% of the arable area would have been considered exempt from the obligation and at least a further 70% of the area was already meeting the requirements of the measure. For these countries, changes in cropping patterns were identified on 514,950 ha, representing 0.8% of the arable area (likely to be an underestimate), although locally the impact has been more significant. The measure also may have slowed the general trend towards monocropping. Farmers who diversified their cropping patterns mainly decreased the area of common wheat, barley and maize and introduced leguminous plants, peas, field beans, sweet lupins, rape and turnip rape, fallow and sunflowers. The greatest changes took place in Spain (on 2.8% of the arable area), with a shift from barley and wheat to leguminous crops. The choice of replacement crops is also likely to have been influenced by the availability of Voluntary Coupled Support (VCS) and the option to use N-fixing crops to contribute to the EFA obligation. Although based solely on interviews, there is some evidence to suggest that increases in crop diversity are linked with increases in rotation length.

**Permanent Grassland (ESQ3):** The evaluation examined the extent to which both elements of the permanent grassland measure (the ratio and ESPG), affect the net area of permanent grassland. The changes in the definition and eligibility of permanent grassland that were made in the 2013 CAP reform led to significant changes in the eligible area of permanent grassland, which in turn affected the calculation of the ratio. Overall, these changes have led to an increase in the area of permanent grassland to be counted for the ratio in 15 Member States, and a decrease in 12, with the largest decrease (-31%) in Spain where 2.2 million hectares became ineligible in 2015 (mainly wood pastures). In addition, land under the Small Farmers Scheme and organic farms are not covered by the ratio requirements.

Clear pressures on permanent grassland are already evident in 2015-2016 in 12 Member States, of which five are over the 5% threshold (CY, EE, FR-Haut-de-France, RO, UK-En<sup>2</sup>). All but four Member States (BE, DE, FR and UK) chose to apply the ratio rules at a national level, which masks significant levels of permanent

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<sup>2</sup> Although in UK-En this is thought to be due to data issues rather than a reflection of the actual situation

grassland loss at the NUTS3 level in some countries. However, the pre-authorisation system put in place in six countries (DE, IT, LU, PT, CY, FR) does appear to be a disincentive to ploughing permanent grassland, especially in Germany. Moreover in some countries, the transposition of EU legislation (e.g. Nitrates, Birds and Habitats Directives) and national legislation (e.g. in CZ and RO) prevents ploughing in some areas. Since IACS/LPIS data were not accessible for this study, it was not possible to calculate the actual changes in permanent grassland taking place within Member States at the more local level.

Within Natura 2000 sites 7.7 million ha of permanent grassland was designated as ESPG in 2016 (51% of the total). Although seven Member States declared all permanent grassland in Natura 2000 sites as ESPG, most others designated a lower proportion of habitat types. The area of ESPG declared by farmers, and therefore on which the rules apply, is lower than the area designated and equated to five million hectares in 2016 (63% of the ESPG area). The net effect of the measure within Natura sites is uncertain given their existing protection, but it is likely that ESPG designation leads to closer control for these areas, especially in countries where ploughing bans or pre-authorisation requirements for these habitats are not in place.

The option to designate ESPG outside the Natura 2000 network was taken up by five Member States in 2016 (BE-FI, CZ, LV, LU and UK-Wales), covering 309,775 hectares. Whilst the added protection afforded by ESPG designation will vary amongst Member States depending on the existing protection and compliance control measures in place, it is expected to be greater than in Natura 2000 areas. Nevertheless, its overall net effect outside the Natura 2000 network is inevitably very low due to its limited coverage.

**Ecological Focus Areas (ESQ4):** The evaluation sought to determine the extent to which the EFA measure has led to changes in the use of the arable cropping area, the adoption of new farming practices and/or the creation of additional landscape features or other ecological areas. Farmers declared a much higher proportion of their eligible arable area as EFA than required (9.7% compared to the required 5%), although percentages differ at farm level. The total physical area (before applying weighting factors) declared as EFA in 2016 was 8.5 million ha, or 14% of EU arable land. The main types of EFA declared by farmers at EU level are linked to productive or potentially productive areas: N-fixing crops and catch crops, together accounted for 73% of the total EFA area in 2016, followed by land lying fallow (24%). Landscape features come fourth with 1.4% of the total EFA area in 2016.

In terms of effects, the data suggest that the EFA measure is one of a range of factors driving an increase in the area cultivated with N-fixing crops, such as pulses, soybean and green fodder (alongside VCS, the crop diversification measure and market developments). It has also helped spread the use of catch and cover crops in some regions (FR, DE, CZ, UK-En), although this is also influenced by requirements under the Nitrate Action Plan (e.g. in NL) or under cross-compliance. For land lying fallow, the negative trend in EU fallow area stabilised in 2015 in many of the Member States where fallow was used by farmers to meet their EFA obligations, suggesting the EFA measure is one of the drivers of this change. The impact of the EFA measure on the maintenance of landscape features is likely to be small, given their limited uptake and the fact that most are already subject to some degree of protection under national law, or through cross-compliance. However there is some evidence that the EFA measure has encouraged some Member States to increase the range of landscape features protected under cross-compliance.

**Effects of the greening measures on production and economic viability of farms (ESQs 5&6):** The effects of only the EFA and crop diversification measures were analysed as few direct impacts were anticipated from the permanent grassland measure in the short term. Production was analysed by area cultivated rather than volume to exclude the impact of changes in yields. The EFA measure has had a very low impact on the area available for crop production. The crop diversification measure led to a slight decrease in the area planted to cereals (mainly soft wheat, but representing less than 1% of the EU soft wheat area). However, the two measures together do appear to have contributed to a halting of the decline in the area of dry pulses and leguminous plants, alongside other factors including VCS. They also appear to have made a small contribution to the increase in the cultivation of soybean, but this effect is more driven by the market and VCS. The crop diversification measure has also helped halt the declines in rapeseed and sunflower. Of the case study countries, changes in production were particularly significant in Spain (a decline of 6% and 4.5% in the area of soft wheat and barley respectively, whereas dry pulses and leguminous crops increased). The crop diversification and EFA measures together also seem to have stimulated changes in the geographic distribution of the area of dry pulses, contributing to increases in Poland and Lithuania. No significant effects were identified on price.

As regards economic viability, a proper counterfactual analysis was only possible for the crop diversification measure. The results show that this measure had no significant effect on the profitability of farmers who had to diversify at the national level. However, some effects were identified in specific NUTS2 regions. This is also true for production costs, reflecting the fact that the effects on profitability of introducing protein

and leguminous crops vary depending on local context, which in turn affects feed costs. There is no evidence that the crop diversification measure impacted farmer incomes, except in the Weser-Ems region of Germany (negatively). This contrasts with the expectations of many farmers, as reported in the case studies.

## ENVIRONMENTAL AND CLIMATE EFFECTS

ESQs 7-10 assessed the net environmental and climate effects that are anticipated as a result of changes in farming practices brought about by the greening measures. As the greening measures had only been implemented for two years at the time of this evaluation, there were no data available on which to assess actual environmental impacts. Moreover many environmental and climate impacts of greening will not be detectable at this stage. Effectiveness was therefore assessed based on inference, drawing on scientific evidence of the general impacts of the farming practices influenced by the greening measures, supplemented with information from the case studies.

**Ecological Focus Areas (ESQ7):** EFA elements have the potential to deliver benefits not just for biodiversity, their main objective, but also for water, soils and climate. However, these impacts are expected to vary greatly, depending on the type of EFA element and on the way in which they are managed, the latter depending *inter alia* on the rules attached to them (e.g. use of pesticides and fertiliser, location, timing of cutting dates). The analysis shows that for the EU28, the EFA element with the potential to have the greatest net positive environmental and climate impact is land lying fallow, however at present the rules associated with its management (e.g. timing for removal) are not always compatible with achieving environmental benefits, particularly for biodiversity. Net benefits are also possible for landscape features (i.e. field margins, hedges, trees, ponds and ditches), buffer strips and from multi-annual N-fixing forage crops. However, the benefits from these EFA elements are expected to be low as a result of the lack of appropriate management requirements (e.g. to prevent pesticide use or N leaching after the use of N-fixing crops), the low level of uptake (e.g. the non-productive options) and in some cases their protection also under other policy measures. Nonetheless some Member States have put in place requirements to bolster the environmental performance of EFAs, for example rules on the management of N-fixing crops post-harvest in Spain and Germany, and the EFA equivalence scheme under the agri-environment-climate measure in Austria. In addition where the EFA measure has contributed to slowing the decline of multi-annual forage legumes, this is expected to be beneficial, such as in Spain where traditionally cultivated legumes provide suitable habitats for a wide range of species, including wild bees and other pollinators, and some EU threatened mammals and birds.

**Crop Diversification (ESQ8):** Although the main objective of the crop diversification measure is to improve soil quality, increasing the number of crops that are cultivated may also have some effects on biodiversity (particularly soil biodiversity), water and climate. These effects, however, depend on the types of crops grown and when (e.g. spring sown versus autumn sown). Greater environmental and climate benefits can be achieved where multi-year crop rotations are put in place. In terms of net effects, the measure probably benefits biodiversity in the most intensive arable landscapes, especially where dominated by maize or winter wheat, but overall the impact is minor due to the low percentage of land diversified. The assessment of this effect however does not take into account the effect of slowing the trend towards greater monoculture. There is some suggestion that a shift from winter to spring crops may be partly encouraged by this measure and this would be beneficial for biodiversity, particularly if stubbles are left in the ground over winter. Protection of soil from erosion may have improved in countries such as France, Germany and the Netherlands where maize has frequently been replaced by crops providing better soil cover, e.g. wheat, barley and other cereals, or by legumes. Although this may not always be the case if shorter growing seasons for legumes such as peas leave the soil without cover for longer or where maize has been replaced with another row crop such as sunflowers, as in France. The greatest environmental impact is likely to have been in Spain, since it accounts for the largest area of land on which changes in cropping have taken place. Since the main changes were the replacement of cereal crops by legumes, benefits for soil and water quality and GHG emissions are likely to have occurred (the latter two as a result of reduced applications of nitrogen fertiliser).

**Maintenance of permanent grassland (ESQ9):** The main objectives of this measure are carbon sequestration and biodiversity. The environmental and climate benefits of maintaining the area of permanent grassland through limiting declines in the ratio of permanent grassland to total agricultural area to less than 5% depend on the location and type of grassland maintained, and the extent to which the grassland that remains in place is ploughed or reseeded. Greater protection is afforded compared with the counterfactual situation which permitted declines in the ratio of up to 10%. Where prior authorisation processes are in place, greater environmental and climate benefits are likely to accrue since these provide

the opportunity to assess the environmental and climate impacts of proposed grassland removals and proceed accordingly.

The ESPG measure protects large areas of permanent grassland within the Natura 2000 network from being ploughed up. This has the potential to result in substantial and wide environmental benefits given their importance for biodiversity, soils, water and climate objectives, complementing the protection under the Birds and Habitats Directives. However, the potential benefits of this ESPG measure are limited by the low area of sensitive (Annex I) grasslands designated in many countries. The evidence of how Member States have designated ESPG suggests that there are different interpretations of what constitutes 'the environmentally most sensitive areas' which 'need strict protection' as required by the Direct Payments Regulation. The low levels of ESPG designation in some Member States suggest that there is scope to extend its coverage and increase its impact, particular in light of the important challenge of achieving good conservation status of these valuable grasslands to which the ESPG measure should contribute. There is also the potential for wide environmental benefits from the designation of ESPG beyond Natura 2000 sites, however such impacts are currently very limited because the option to designate ESPG outside Natura 2000 sites was only taken up by five Member States, the combined area was only equivalent to about 2% of the total EU area of Annex I habitats outside the network and much of the area is already protected to some extent under national legislation.

The study also examined to what extent the greening measures had increased farmers' awareness of environmental issues (ESQ11). The conclusion was that they did not appear to have done so to any great extent, partly because many farmers did not have to change their farming practices to comply, but also because advice to farmers in the first years of implementation has been focussed primarily on compliance with rules rather than achieving environmental outcomes, albeit with a few exceptions (e.g. AT, CZ, UK-Sc).

## **ADMINISTRATIVE COSTS AND EFFICIENCY**

ESQs 12 and 13 examine first the extent to which the implementation of the greening measures has led to a change in administrative burden for beneficiaries, Member State administrations and the Commission services; and secondly the extent to which the measures have been efficient in achieving the CAP general objective of 'sustainable management of natural resources and climate action' and enhancing the environmental performance of farming.

In relation to the administrative burden, a survey of 21 Member States provided data on which a conservative estimate of the additional public administration costs of the greening measures was based. Although it is difficult to estimate these accurately, extrapolating the information provided to the EU28 suggests that these are likely to fall between €27 and €76 million per year, with running costs accounting for 80-90% of these. This equates to approximately 0.2-0.65% of the value of the budget dedicated to the greening payment and between 3.0 and 8.5% of the total public administrative cost of direct payments as a whole, estimated at €890 million in 2016. For small countries and those with a highly decentralised administration of the CAP, these costs are likely to be at the higher end of the range, mainly due to set up costs. Evidence from a small sample of farmers in the case studies suggests that private transaction costs for farmers were equivalent to 3-9 hours per year per farm and largely independent of farm size.

In terms of overall efficiency, the scarcity of quantified data, in particular for benefits, made a true efficiency analysis for the greening measures impossible to carry out. In qualitative terms, the relatively low level of administrative costs associated with delivering these measures via the IACS system is set against a fairly low level of net environmental and climate benefits associated with the greening measures as currently applied. However, many of the reasons for the low level of environmental performance could be overcome by changes in the obligations (e.g. regarding the use of pesticides, timing of operations etc for EFAs, or operating the permanent grassland measure at the regional level), some of which will come into force in 2018 as a result of the new delegated regulation 2017/1155. This would suggest that there is scope to improve the efficiency of this type of mechanism in the future.

## **COHERENCE (INTERNAL AND EXTERNAL), RELEVANCE & EU ADDED VALUE**

Under ESQs 14 and 15, the coherence of the greening measures with all three CAP objectives as well as with other EU environmental and climate legislation was examined. The results showed that the greening measures are generally coherent with other relevant measures to achieve the objective 'sustainable management of natural resources and climate action', particularly cross-compliance and the agri-environment-climate measure, although more could be done to make these work together in a synergistic

way. One issue of incoherence was highlighted between the way the permanent grassland definition and the CAP eligibility rules are applied by Member States and the permanent grassland measure, whereby large areas of environmentally valuable permanent grassland can be excluded from the scope of the measure (as seen in Spain). The greening measures are also shown to be coherent with the wider CAP objectives of viable food production and balanced territorial development. In terms of coherence with other EU environmental and climate legislation, in most cases the greening measures are coherent with the policies examined, although there are not necessarily safeguards in place in terms of their implementation to prevent conflicts occurring in practice.

Under ESQ16, the relevance of the greening measures for addressing the environmental and climate needs and problems identified at EU and Member State level was assessed. At the EU level, all three of the greening measures have some relevance for addressing all the environmental and climate priorities and needs related to EU objectives. However, the measures are not assessed as fully relevant because the rules associated with the measures often limit their degree of relevance. The ESPG is of greatest relevance to the EU's biodiversity objectives, as well of substantial relevance to water and climate objectives, as it targets semi-natural habitats that are of much greater biodiversity value than arable farmland habitats. A number of the EFA elements are those that are most relevant to delivering biodiversity priorities on arable farmland. The relevance of the crop diversification measure against all objectives (even soil quality) is far lower than the other greening measures.

Finally, under ESQ17, the evaluation assessed the extent to which the greening measures have created EU Added Value. The assessment shows that having the greening measures defined at EU level does provide added value chiefly by setting a higher level of environmental ambition, a greater degree of uniformity (although with considerable scope for divergence in ambition due to the flexibilities in the EFA measure and equivalence schemes) and a stronger financial incentive than would be likely from all Member States if left to choose for themselves.

## CONCLUSIONS AND RECOMMENDATIONS

Linking a substantial part of income support to farmers to environmental requirements via the greening measures within Pillar 1 in 2015 was an innovation for the CAP. Adjustments to these changes were bound to take some time for Member States. This evaluation has been carried out after only two years of implementation of the greening measures and as such many of the findings highlighted above are preliminary. A number of recommendations are made that relate both to the evidence base available for the evaluation and the future policy design of the greening (or equivalent) measures.

In relation to data availability, data were not generally available to us on how farmers implemented the measures on the ground, specifically what crops they have cultivated, where they have placed or managed their EFA elements and whether grassland has been ploughed or not at the parcel level. Without such data, it is very difficult to assess the environmental and climate effects of the measures. With the entry into force of the Geo Spatial Aid Application, the evaluation recommends the collection of the necessary additional information and then to organise the aggregation of IACS/LPIS data to make them available for analytical purposes. It should be organised also to contribute to regular surveys like the Farm Structure Survey.

A range of recommendations for future policy design and implementation is proposed to enhance the environmental effectiveness of the greening measures (or similar future measures). In particular, the report highlights the need to amend the management rules attached to EFA types to ensure they deliver for the environment and find ways to encourage greater uptake of the most beneficial EFA types (e.g. land lying fallow, landscape features, field margins, buffer strips). It also stresses the need to implement the ESPG measure more widely both within and outside the Natura 2000 network to cover a far greater proportion of Annex 1 habitats. In addition, improvements should be made by Member States to design and justify their greening measures according to specific regional, local concerns and progress against these goals should be assessed at the middle and end of the financial period. Greater synergies between the implementation of the greening measures with cross compliance and the agri-environment-climate measure should also be a priority for Member States, to enable more tailored outcomes for the environment to be achieved. Last, but not least, is the need to ensure that suitable advice is available to farmers, not limited to the administrative and compliance aspects of greening but, more importantly, on their purpose and ways of optimising their environmental and climate effects.

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