

Common Agricultural Policy from 2014 - Perspectives for more Biodiversity and Environmental Benefits of Farming?

Policy recommendations from the project “Reform of the Common Agricultural Policy (CAP) 2013
and achievement of the biodiversity and environment goals”





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1. Introduction

The European Union has set the target of halting the loss of biological diversity by the year 2020, - after having failed to meet this goal by 2010. Agriculture, because of its large proportion of land use - 41 % in the EU (European Union 2011), 52 % in Germany - plays a decisive role for the state of the environment and for the implementation of biodiversity goals in Europe.

A CAP compatible with nature and taking account of ecological efficiency is afforded great significance (see also EU Biodiversity Strategy 2020). How closely agricultural use and biodiversity in Europe are related, is demonstrated for instance by the fact that the number of birds in the open farmed countryside has declined by half since 1980 (EBCC 2012).

Europe's agricultural landscape has to fulfil a variety of functions, from food and fodder production and the provision of substrates for the generation of bio-energy, differing ecological system services (pollination, water filtration functions, soil and climate protection, genetic diversity of flora and fauna), as well as guaranteeing a diverse and aesthetically acceptable cultivated countryside as recreation and habitat for humans (Fig. 1). At present a one-sided optimisation of

individual functions can be identified (Fig. 1), in particular the production of food, fodder and biomass. This development coincides with a negative effect (trade-off) on the remaining ecological system benefits.

In the past few decades a grave deterioration in the state of the environment and biodiversity in the greater part of the agricultural countryside has taken place).

Against this background a revised framework of the future Common Agricultural Policy (CAP) from 2014 onwards is being prepared. To this end the European Commission presented its legislative proposals in mid-October 2011. One defined goal of the Commission for future agricultural policy includes a 'greener' CAP, namely one that is more compatible with nature and the environment, in order to generate more strongly socially-desired ecological benefits.

The present paper presents policy-relevant results of a research and development project¹ concerning biodiversity in the agricultural countryside (in Part A 'Greening', in Part B changes in the 2nd pillar, in Part C financial implications in the CAP).

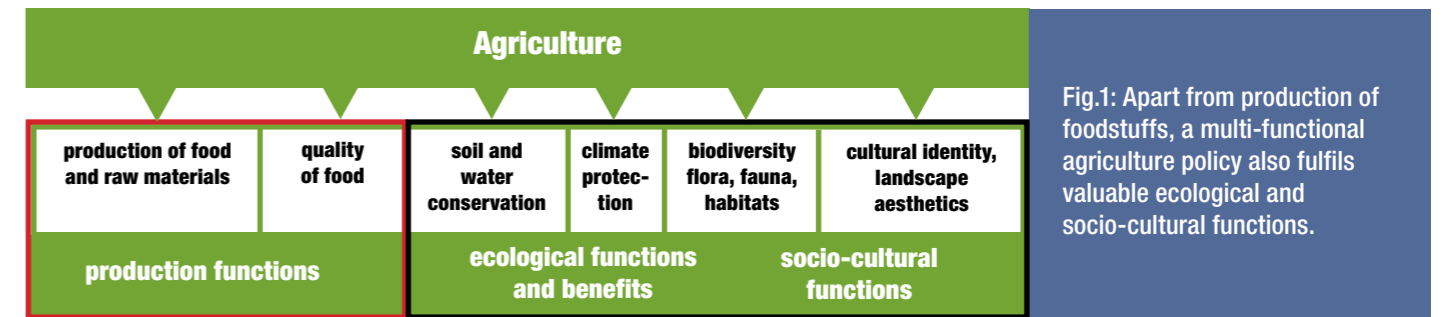


Fig.1: Apart from production of foodstuffs, a multi-functional agriculture policy also fulfils valuable ecological and socio-cultural functions.

A) Pillar 1 of the CAP - Greening and its implementation

With the introduction of so-called greening, a component to promote ecological development is included in Pillar 1 of the CAP for the first time. This is intended to guarantee that farmers in receipt of financial subsidies must, in addition to the existing cross-compliance requirements, also generate benefits for nature, environment and climate protection (European Commission 2011). 30 % of the direct payments are planned for greening and, in accordance with the Commission's proposals, all farmers with the exception of organic farms and smallholdings are required to achieve the greening component. Regulations for crop diversification (crop rotation), conservation of permanent grassland and Ecological Focus Areas (EFA) are planned in this respect. The project has yielded the following results for these central elements of greening.

Biological stability through crop diversification²

The Commission proposes that farms with an area of more than 3 hectares arable land must be cultivated with at least three different crop cultures, each with a minimum share of 5 % and a maximum share of 70 %.

The commitment to crop diversification should guarantee a minimum variety of different field crops. Positive effects in abiotic and biotic resource protection can be achieved through crop rotation, as long as it is conducted in a variegated manner and on a small scale (e.g. Osterburg 2002, Stinner & House 1990, Fuchs & Saacke 2006; Schindler & Schumacher 2007). This also benefits birds of the open countryside such as Skylarks (Chamberlain et al. 2000; Jenny 1990, Weibel et al. 2001). Crop rotation measures also have long term benefits for crop yields as they preserve the fertility of the soil (Gisi et. al 1997).

The analyses of crop rotation carried out in the framework of the project resulted in the following findings:

²The term 'diversification of cultivation' stands for the desire for true crop rotation. As however the greening measures are planned on an annual basis, the percentage of adjacent crops only can be stipulated. In the rest of the paper the term 'crop rotation measures' will be used for ease of understanding.

- A study of 41 farms throughout Germany demonstrated that almost all of them (97%) have at least four different field crops with a cultivated area of > 5% und < 50% (based on Oppermann et al. 2005).
- The analysis of the agri-environmental programme showed that crop rotation measures as part of this programme were implemented in four federal states (Thomas et al. 2009). In Bavaria, North-Rhine Westphalia and Thuringia the measures include the cultivation of five to six main crops and are tied to the fulfilment of several additional criteria (e.g. extent of main crop cultivation > 10% and < 30%, percentage of grain on arable land < 66%, percentage of legumes or legume mix at least 5% or 7%). If all criteria are met a remuneration of 20 Euro/ha to 50 Euro/ha is forthcoming. In 2009 in Baden-Württemberg for instance these measures were implemented on a total area of 358,653 ha (43% of the arable land) and in Thuringia on 120,561 ha (20% of the arable land). The acceptance and agricultural feasibility of the measure has thereby been proved.
- The biodiversity effect of crop rotation measures is all the greater if the crop rotation is more varied and the crops more diverse (e.g. inclusion of legumes) and the smaller the plot cultivated (Schindler & Schumacher 2007).
- The diversification of cultivation proposed by the European Commission in the framework of greenings is, in a qualitative ecological sense, not particularly ambitious and will have no appreciable effect in Germany, with the exception of regions with a high percentage of maize cultivation (livestock holding, biogas) where crop rotation measures with a remuneration of only 20-50 Euro/ha has proved unattractive to date. If diversification of cultivation measures is to have the above-mentioned and intended positive effect in Germany their content must be more ambitiously designed.



¹A cooperative project by three institutes: Institut für Agrarökologie und Biodiversität (IFAB), Mannheim, Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF), Müncheberg and Hochschule für Forstwissenschaft Rottenburg (HFR), Rottenburg.

Recommendations:

- In accordance with the findings of the scientific research a minimum of four different crops should be grown, each taking up a minimum percentage of 5% and a maximum percentage of 50% of the arable area.
- Due to the positive influence on biodiversity and soil fertility, an additional minimum percentage of 5% legumes in the crop rotation should be stipulated (with state-specific agri-environmental plans a higher percentage can be additionally remunerated).



Permanent grassland – conservation and management

On a European level the analysis of the threat to grassland species shows a particularly high percentage of endangered species and/or a bad state of preservation of the grassland habitats (Bilz et al. 2011). Permanent pasture is characteristic for the face of the countryside in many areas of Central Europe and is of essential significance for biological diversity. In addition it is an elementary precondition for soil, water and climate protection. The greenhouse gas emissions caused by land use are in Germany due in great part to the changes to former bogland, which to date is used as grassland (Wegener et al. 2006).

The Commission proposes that farms must preserve their permanent grassland on the baseline of 2014 and may only transform a maximum of 5 % into arable land. A minimum percentage of extensively used areas, or field borders or strips either unused or earmarked for later use, is not planned.

The project research revealed the following facts:

- Over the past few years the extent of ploughing up of grassland in bogland, areas threatened with erosion, but also on particularly species-rich areas extensively used over many years, has taken on enormous proportions (Stein & Krug 2008; Lind et al. 2008, Nitsch 2010). Studies of land use in four federal German states showed that between 2005 and 2007 the grassland areas decreased by some 80,000 ha, of which 41,300 consist of ploughed-up grassland for arable use - 6,000 ha alone on bogland (Nitsch et al. 2010).

- As a rule the ploughing-up of grassland is almost always to the detriment of sensitive areas. These had not previously been used for arable crops because of their site characteristics (too damp or wet, too shallow or dry soil, or threatened by erosion or flooding).
- Research has shown that, dependent on the type of countryside, a percentage of from 10% to over 40% of extensively used grassland is necessary in order to fulfil resource protection and habitat functions (Jenny 2011, Oppermann & Spaar 2003, Walter 2012).
- The introduction of a 20% proportion of extensive growths in the food ration of above all livestock with a diet of raw fodder presents no problem - even for the most intensive dairy farms with high milk production - as long as it is added to the fodder in the proper dosage (cf. Koch, Jäckle & Jans 2003, Jilg 2011) and the farm area available permits.
- Ecologically valuable permanent pastures are frequently irregularly grazed extensively and the areas are therefore partly covered by trees and bushes. Because of the proportion of bushes the areas, which are valuable from a nature conservation point of view, frequently lose their entitlement to direct payments or measurement of the area involves a high degree of effort (Jedicke & Metzner 2012). As a result the continued management of the ecologically highly valuable permanent pastures is unattractive for the farmer and cannot be guaranteed in the long term (DVL 2012).

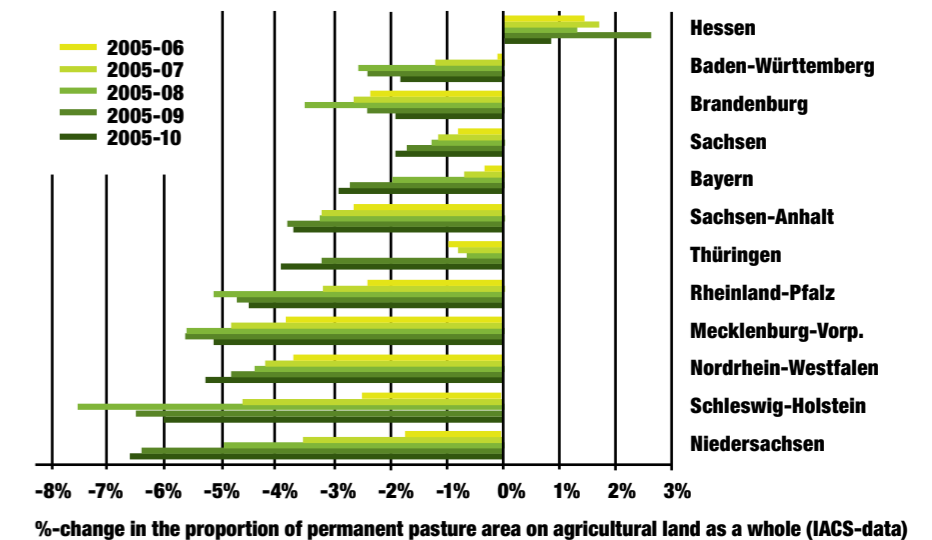


Fig. 2: Grassland is increasingly managed more intensively, that is with a higher nutrient intake as well as a higher frequency of mowing.



Fig. 3: Species-rich grassland is both quantitatively and qualitatively endangered in Germany - although it plays a particularly important role in preserving biological diversity as well as affording protection for water, soil and climate.

Fig. 4: The analysis of agricultural statistics shows a marked decrease in permanent grassland in nearly all regions of Germany (Schramek et al. 2012) based on the data of the Integrated Administration and Control System (IACS).



Recommendations

- The scientific analyses show that ploughing-up of grassland should not generally be permitted up to a set ceiling, but be restricted to a maximum of 5 % ploughing-up of the grassland area in exceptional cases (with individual permission granted when there are no contra-indicative specialist environmental or nature protection reasons).
- Grassland ploughed up between 2011 and 2014 must be reseeded.
- Areas of ecologically valuable extensive grassland, partly covered by trees and bushes, should in future be accepted for entitlement to direct payments, without a complex measurement of the dynamic structure of the trees and bushes being necessary.
- An area of at least 20% of the whole of the grassland belonging to the farm must be extensively used. The type and extent of the extensive use is to be additionally remunerated through agri-environmental measures.

Land use in the interest of the environment – cornerstones for a professional environmental structuring of Ecological Focus Areas

The Commission proposes that farmers should dedicate 7% of their total area in agricultural use (with the exception of permanent grassland areas) as Ecological Focus Areas (EFAs).

EFAs are a means of creating a bonding system in the countryside under arable use, which guarantees the networking of biotopes and habitats and other ecological systems as well as improved resource protection for soil water and climate. EFAs are a core element of greening, with the clear goal of the Commission being the conservation and improvement of biodiversity (DG Agri 2012).

Project research shows that the highest positive impact on biodiversity can be expected from the greening element EFA³:

- A proportion of 10 - 15 % EFAs in good condition⁴ and with good management is necessary in order to achieve sustainable positive effects for biodiversity (Jenny et al. 2011, Flade et al. 2012, Kohli et al. 2004, Holzgang et al. 2005, Birrer et al. 2007, Holzschuh et al. 2011, Krewenka et al. 2011).
- Of particular importance are unexploited landscape elements or areas that offer sanctuary and habitat for flora and fauna during autumn and winter (Berger et al. 2006, Bürki & Pfiffner 2000). Residual elements and stubble coverage also afford protection against soil erosion and nitrate leaching (Brunotte 2007).
- Extensively used arable land and unexploited landscape structures as EFAs can achieve a positive effects on biodiversity. Studies show for instance that with birds of the open countryside an increasing intensive use of land

results in a decreasing significance for biodiversity (Joest & Illner 2011, Luick et al. 2011, Bernardy & Dziewiaty 2012).

- Studies of crops dependent on insect pollination show that the extent of pollination rises with an increasing proportion of semi-natural habitat. A proportion of 10 - 20% semi-natural structures is the minimum required in order to guarantee good pollination (Krewenka et al. 2011). In addition, studies of strawberry crops showed that fruit weight and quality improved with an increase in visits by pollinating insects, and over 30 % of the economic yield is dependent on the pollination (Holzschuh et al. 2011).
- In respect of the effects of the EFAs on agricultural production, several scenarios demonstrate that the average total farm and national economic losses are only short term, whereas production losses are quickly compensated for by yield increases in agricultural crops (IFAB 2012).
- EFAs are as a rule the areas with the lowest yields on a farm; the decrease in yield is therefore in most cases regarded as economically unproblematic, a fact confirmed in a survey of farmers' opinions during the project. A clear conflict between the economic interests of the farmers and the designation of EFAs occurred only on intensively used Börde sites. The decline in yields here are substantial. The requirement for and the ecological advantages of EFAs in these areas is however particularly high here, so that 10 % of EFA is especially important for the biotope network and the eco-system benefits particularly in these parts of the countryside.

³Further results for EFAs can be found in the studies by ifls 2012 und IFAB 2012

⁴EFAs require in part a regular management in order to develop their full potential (e.g. flower strips or specially open grain crop fields for species protection).

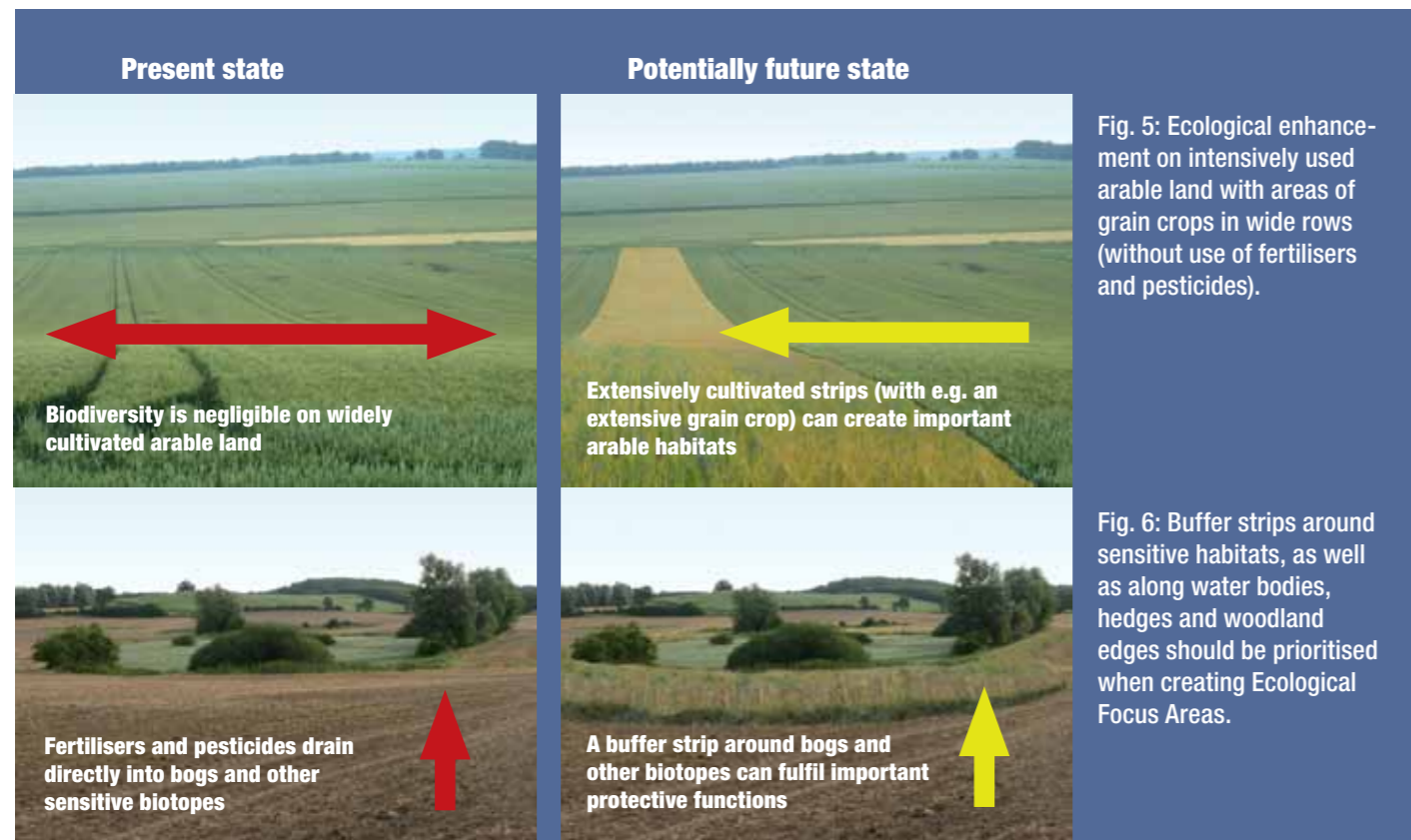


Fig. 7: Flowering strips and plots not only offer a food source for numerous insects, they also enrich the landscape. In addition they also provide important structural elements in the agricultural countryside in winter by providing cover and shelter.

Recommendations:

- In accordance with the results of the present study, the extent of EFAs must reach at least 10 % in order to significantly increase the habitat suitability for species tied to a particular agro-ecosystem. If the CAP reform results in an increase of only 7 %, it is extremely important that this proportion of 7 % EFA is well-managed in order to achieve optimal effects.
- In order to implement the EFAs effectively, specific maintenance and management measures are essential (agri-environment measures (AEM) such as buffer, fallow and blooming field strips, species-rich arable land, extensive grain crops, species protection measures and mixed crops, each measures with specially set standards – see Tab. 2 and 3).
- General obligations must be laid down for all EFAs, such as no use of pesticides or fertilisers, no interference in the flora from 1. May to 31. July annually (close season for game, birds and vegetation) and ploughing up of stubble not before 31 December annually (stubble cover as protection from erosion and nutrient leaching, winter habitat).
- Integration and implementation of EFAs specific to each farm and in all types of countryside is essential.
- On plots > 10 ha, EFAs should be laid out in a plot-specific manner. On farms with > 100 ha arable and permanent crop area a specific agri-environmental plan is to be developed (site-specific planning and therefore target-orientated layout of the areas e.g. along water bodies, ditches, hedges, woodland edges, on organic and shallow soils).

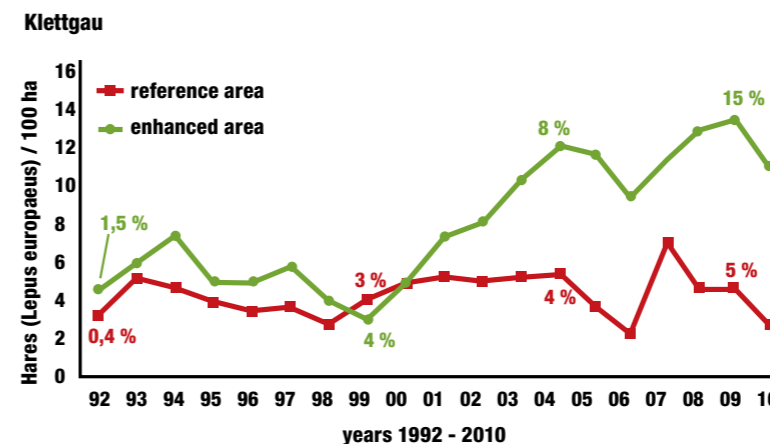
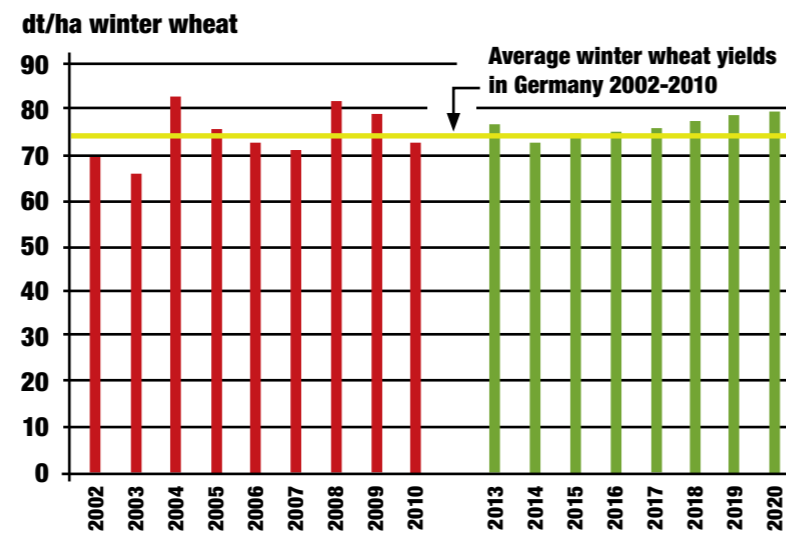


Fig. 8: A wide scale, long term study of the population development of the European Hare in two communities shows how the hare population in one community reached a stable level of over 10 animals per 100 ha only after a percentage of 8 - 15% of EFAs had been established. The hare population in the other community with only 4 - 5% EFAs failed to achieve a stable level in the long term (Jenny et al. 2011 amended).

Fig. 9: A preview of changes in winter wheat production in Germany, taking account of 10 % EFA, showed only a short term decrease in national production levels, after which an re-increase of production can be expected.

Red columns: Wheat yields from the time-frame 2002 - 2010 according to the Federal Statistics Office (destatis 2011).

Green columns: extrapolated average wheat yields for the time-frame 2013 - 2020 taking account of 10 % EFA plots and the average wheat yield increases (from IFAB 2011).



Agri-environmental measures on arable land and in permanent crops on EFAs

- Perennial, biennial and annual blooming strips (sowing of mixed flowering plants)⁵
- Strip-sowing of flowering plant mixes in permanent crops (e.g. between vine rows and in orchards)
- Establishment and management of arable plots to protect wild herb species and/or endangered fauna species (such as the European Hamster, Montagu's Harrier, Skylark etc.)⁶ as well as species protection management of field edge strips
- Planting of endangered cultivated plant species and types in an economically extensive manner (without synthetic chemical pesticides) with harvesting from end-July at the earliest and leaving stubble unploughed in autumn: e.g. wild emmer and einkorn wheat, etc.
- Sowing and management of buffer and erosion protection strips e.g. along biotopes, hedges, water bodies and slopes threatened by erosion
- Transformation of arable land into extensive grassland with autochthon sowing⁷ on bogland and along water bodies
- Establishment of landscape elements on arable land plots to enable biotope networking, e.g. planting of autochthon hedges or copses. Construction of dry stone walls or planting of tree lines along field borders etc.

⁵Crucial measures: leaving plant growth partially standing in autumn and no autumn ploughing.

⁷Plot-based measures - provision of Skylark 'windows' is not a plot-based measure.

⁸With regional seeds or with heudrusch, hay mulch or grass cuttings spreading methods.

Fig. 10: Overview of potential agri-environmental measures to be implemented on EFAs with remuneration.



Organic farming and greening - is mutual exclusion sensible?

The legislative proposals exclude organic farms from the greening obligations. This is justified by the higher environmental benefits usually achieved anyway by organic farmers.

- The basic principles of organic farming include varied crop rotation, in particular the inclusion of legumes⁸ (e.g. EU 2007, Bioland 2011).
- A large number of environmental benefits is inherent in the organic farming system, and its positive contribution to biodiversity is also well documented (e.g. FibL 2006, Pfiffner & Willer 2002, Mäder et al. 2002). Changing over to organic farming is considered an effective measure for reducing nitrate pollution of the ground water (Osterburg et al. 2007).
- Studies exist however showing that individual organic farms also have similarly species-poor arable plots as comparable conventional farms (van Elsen & Rahmann 2004; Lindenthal 2008) and that there is a tendency to a

simplification of crop rotation (Fuchs et al. 2003) as well as an intensification of farming management. Transformation of grassland into arable land is not ruled out and, in the guidelines for organic farming, there are no binding rules for the preservation or establishment of EFAs. Nevertheless, planned species protection measures could be particularly effective here.

- It must be clarified to what extent the removal of organic farms from the greening obligations can lead to a conflict with the agri-environmental measure (AEM) premiums in the mid-term, as relieving organic farms from the direct payment obligations, and at the same time allowing AEM premium payments, is close to affording them a double advantage.
- The implementation of greening measures will not demand a special effort for of the majority of organic farmers and it should therefore present them with no problems.

⁸Precise regulations for the percentages of crops and legumes in the crop rotation are not laid down.



Recommendations:

- For the reasons discussed above organic farms should also be required to meet the greening obligations. This would make it easier to justify the award of AEM premiums and not provide them with an extra advantage. This applies in particular to preservation of grassland and the establishment of EFAs.



B) Necessary changes within Pillar 2 of the CAP:

In contrast to the Pillar 1 of the CAP, Pillar 2 requires programming and co-financing on the part of member states or regions (in the case of Germany the federal states). Pillar 2, and in particular AEM, contractual conservation management agreements, Natura 2000 compensation, as well as preservation and promotion of natural and cultural heritage, contains in part very target-specific and very effective measures that have proved their worth as instruments for conservation and development of biodiversity. Nevertheless the financial budget for these is markedly smaller than in Pillar 1, the tasks more varied, and at the same time the member states or regions must raise funds to co-finance the measures, so that many effective measures cannot be implemented to the necessary extent because of shortage of funds. In its proposals the Commission has failed to properly address the necessary proportion of AEM and agri-environmental management within Pillar 2, and the funds available in Pillar 2 have not been augmented.

Agricultural environmental measures and Agricultural environmental management – are the current programmes adequate?

AEM are on offer and are implemented in all EU member states and regions. Some very comprehensive programmes exist and in part the measures find broad acceptance. The AEM serve to implement and reward concrete and target-orientated regional and site-specific environmental management on agricultural land. This is in some cases also necessary for a high ecological effectiveness of the EFAs, as the provision of plots⁹ alone is as a rule inadequate to achieve positive, qualitative and quantitatively measurable ecological effects. It begs the question as to how adequate the agri-environment programmes are, or if they attain the necessary qualitative and quantitative scope. The studies presented the following picture:

- On the basis of the available half term evaluation reports it is demonstrated that the extent of the effectiveness of AEM in some German federal states is declared as up to over 60 % of the agricultural land area (e.g. Baden-Württemberg). If one scrutinises the measures more closely, the extent of 'dark-green' measures¹⁰ is often very low. On average in the whole of Germany only some 0.3 % of arable land and 11 % of grassland is promoted through dark green measures (see Tabs. 1 - 3¹¹).
- Not only is the real extent of the area (as opposed to the necessary extent) very low, but also the target planning on the part of the federal states is in part less ambitious. The target value for the preservation of species-rich grassland in Baden-Württemberg using the AEM is for instance declared as 65,000 ha (MEKA B4), although the total extent at present is still more than 100,000 ha (Results of the official state evaluation 2005) and from an expert point of view an area of over 150,000 ha appears necessary (own estimate)¹².
- The greater extent of AEM is determined by 'light green' measures that only achieve minor ecological improvements, such as the liquid manure drag hose method, dispensation with plant growth regulators, or preservation of a moderately intensive grassland use (< 2 LU/ha).
- In the German, and most of the European programmes, there is generally a lack of AEM that include a result-orientated component, a general farm improvement and a site and farm-specific agri-environmental planning (and consultation). Exceptions or role models are the result-orientated grassland AEM in the French AEM and in a few German AEM, as well as the farm and networking planning in Switzerland, which is not a member of the EU. To date there is also an absence of integrated marketing and quality assurance concepts, with which economically valuable areas can become economically sustainable (meadow orchards are an exception).

⁹As a rule of course farmers meet the obligation to create EFA using the most economically favourable alternative (e.g. without AEM no flowering strips are sown).

¹⁰'Dark green' measures describe those measures that include an extensive use or maintenance, serve comprehensive resource conservation and/or specifically include promotion of biodiversity (as a rule, compared with intensive use, they lead to marked production losses); in contrast the 'light green' measures describe those that involve only minor changes to farm management and as a rule involve little loss of production (e.g. using a liquid manure drag hose method instead of wide spraying, use of autumn and winter greening). Their positive effects have a greater influence on water and soil resource conservation than on species and biotope protection.

¹¹The figures in Tabs. 1-3 are taken from an analysis of the half term evaluation reports from 10 federal German states for the year 2010/2011 using data from 2009.

¹²The target values of the European Agriculture Fund for Rural Development (EAFRD) are in the rule orientated on the realisation of the previous agri-environment programme and not on the necessary scope.

Recommendations:

- The scientific analyses show that the so-called dark green AEM should become a main component of AEM programming and their extent in terms of land area and finance should be so promoted that the ecological aims are qualitatively and quantitatively achieved. In terms of the study presented above, this requires good management in the sense of greater ecological value on 10 - 15 % of arable plots and 20 - 40 % of grassland areas.
- Result and success-orientated AEM, comprehensive farm concepts and agri-environmental planning for farms must also become elementary components of AEM planning. This requires not only an improvement of the EU legislative proposals, but subsequently also state and regional planning (in Germany the federal states).
- Marketing and quality assurance measures for ecologically valuable areas should bridge the gap to the consumer thereby generating true sustainability through value creation and appreciation.

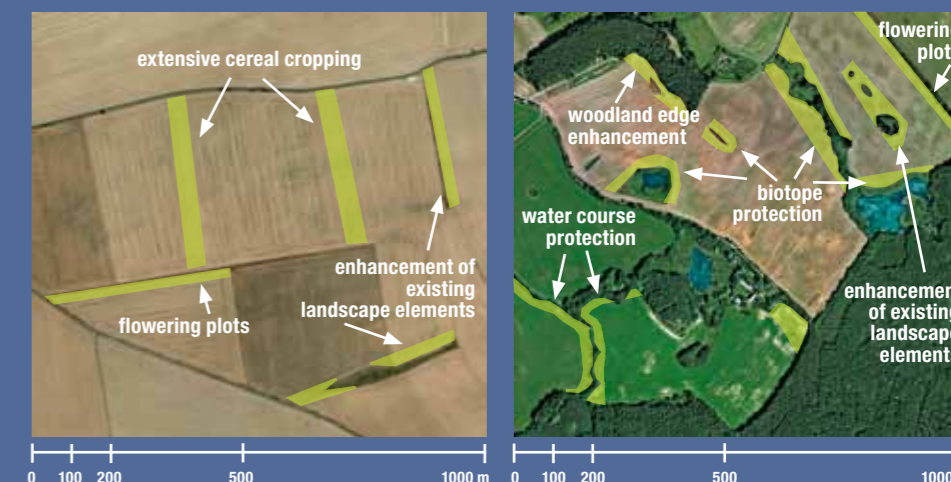


Federal state	dark green measures per ha (%)	
	For arable and grassland areas respectively	
	Arable land	Grassland
Baden-Württemberg	0,01 %	13,26 %
Bayern	0,35 %	10,27 %
Brandenburg mit Berlin	0,02 %	10,90 %
Hessen	0,05 %	8,64 %
Niedersachsen mit Bremen	0,82 %	9,24 %
Sachsen	0,31 %	12,98 %
Schleswig-Holstein	0,05 %	5,46 %
Thüringen	0,15 %	31,19 %
State average	0,32 %	11,16 %

Tab. 1¹³ : Overview of the extent in surface of current dark green AEM on arable land in 10 German Federal States (8 area states and 2 city states).

¹³The figures in Tabs. 1-3 are taken from an analysis of the half term evaluation reports from 10 federal German states for the year 2010/2011 using data from 2009.

Fig. 11: An ecological upgrading of particularly sensitive sites, leading to the highest possible effectiveness of the EFAs on the environment, could be achieved through agri-environmental farm-specific planning. In the fictive example showed here the yellow-green plots are deliberately laid out as EFAs. This provides buffer and border strips for water courses and woodland edges, biotopes are interconnected and arable land enhanced with flowering plots.



Dark green agri-environmental measures on arable land	Support premiums in €/ha
Field border strips, extensive management of wild herbs and plant communities on arable land, arable land conservation management agreements	450 € - 1.160 €
European Hamster conservation, conservation of foraging areas and nest sites, Red Kite conservation, support foraging winter arctic visitors (geese and swans) on arable fields	280 € - 450 €
Setting-aside arable fields for conservation purposes	140 €
Agri-ecological use of arable land and creation of flowering areas, flowering and buffer strips, border and ribbon structures	200 € - 600 €
Buffer strips for water and soil protection, strips along ditches and streams	370 € - 1.000 €
Transformation of arable land to grassland	320 € - 745 €
Preservation of typical regional cultivated plant species and types	150 € - 400 €

Tab. 2: Compilation of dark green AEM on arable land and their support premiums in different German federal state agri-environmental programmes.



Dark green agri-environmental measures on grassland	Support premiums in €/ha
Extensive management, late and restricted grassland use in accordance with a stipulated usage plan, extensive use of valuable habitats	75 € – 375 €
Valuable grassland vegetation on individual plots following the principle of result-orientated payments, management of species-rich grassland	50 € – 215 €
Mowing in accordance with nature conservation requirements, hand mowing (only on damp grassland), management and mowing of meadows on steep slopes	120 - 600 €
Area-typical grazing, biotope maintenance by grazing, special biotope type grazing, grazing by sheep and goats in accordance with nature conservation requirements	100 – 450 €
Creation of fallow plots and strips on grassland	545 €
Extensive grassland use along water bodies and other sensitive areas	280 €
Management and maintenance of meadow orchards in accordance with nature conservation requirements	400 € / 450 €
Mowing with flexible cutter blades	50 €
Meadow-breeder areas	200 € - 450 €
Foraging areas for winter visitors - arctic geese and swans	85 € – 205 €
Grassland on naturally nutrient-poor sites, premium for salt meadows left in their natural condition	175 € - 225 €

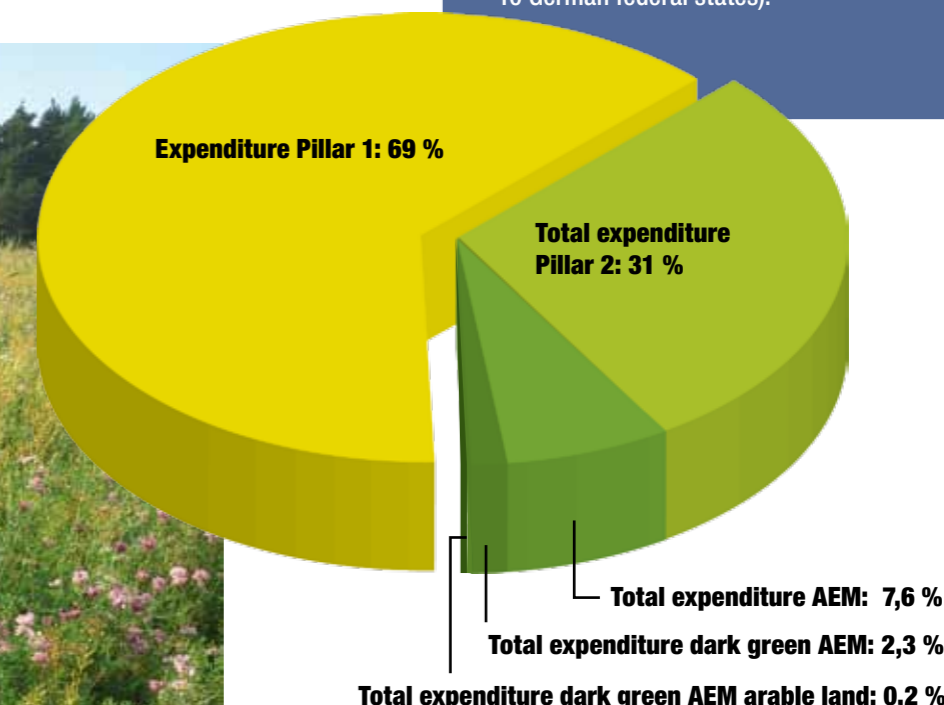
Tab. 3: Compilation of dark green AEM on grassland and their support premiums in different German federal state agri-environmental programmes.



C) Financial implications for a CAP meeting natural and environmental aims

The Commission's proposals provide for a budget of 101.2 Bn Euro for Pillar 2 in the time frame 2014 - 2020 (European Commission 2011) and the member states are required to invest at least 25 % of the total EAFRD contribution in agri-environmental and climate measures, ecological/organic cultivation, and payment of premiums to farmers in disadvantaged areas. The EU co-funding of EAFRD measures is restricted to 50 %, except in a few exceptional cases.

Fig. 12: Extent of the status quo 2009 of expenditure on dark green AEM in the German federal states in percent (%) in relation to the total agricultural subsidy in Pillar 1 and 2 in Germany. Of the total expenditure on agriculture only a small share was allocated to dark green measures and even a smaller share of only 0.2 % of the total agri support was allocated to dark green measures on arable land (data from the 2009 mid term evaluation reports from 10 German federal states).





The analysis of CAP expenditure and the necessary extent of target-orientated AEM revealed the following facts:

- Less than 30 % of the total available budget for AEM is allocated for dark green measures (Source: mid term evaluation reports from 10 German federal states). If the extent of the dark green AEM is considered in relation to the total agricultural subsidy (Pillars 1 and 2) it becomes clear that in 2009 only 2.3 % was paid out for dark green measures. On arable land only some 0.21 % of the total available subsidy is used for dark green measures and they are implemented only on about 0.32 % of the arable land.
- A scenario calculation was used to determine the costs of biodiversity-promoting management through the implementation of ambitious AEM on 5 %¹⁴ of arable land. A cost factor of an average of 400 Euro/ha on arable land was applied (the current AEM grants are between 300 - 600 Euro/ha). Dependent on the level of funding of the state AEM programmes, they would have to meet costs of between 16 - 284 % (on average 43%) of their budget to date in order to implement additional dark green AEM on 5 % of the arable areas.
- Analogous to arable areas, implementation of dark green measures on grassland areas, taking an average subsidy

cost factor of 250 Euro/ha, would require on average another 43 % of the AEM funds. In comparison to the funds available to date in national or regional budgets this is a great deal.

- The measures on arable land and on permanent pasture, as well as the costs for associated operational planning and management (10 % of the AEM), amount to 96 % of the total AEM budget to date. In most of the German federal states reviewed, the costs up to now already exceed 100 % of the total AEM budget.
- This additional expenditure on dark green plots, together with the reduced EU co-funding for AEM to a level of 50 % would in some EU countries and German federal states lead to great problems in terms of continuing to implement and fund adequate conservation measures.
- The mean funding requirement for target-orientated AEM, necessary to guarantee efficient management of EFAs on arable land and valuable grassland areas, amounts to some 840 M Euro¹⁵, equal to some 15 % of the complete Pillar 1 budget for Germany, or alternatively some 50 % of the 1.7 Bn Euro/year foreseen for greening in Germany.

Recommendations:

- In order to efficiently meet conservation and environmental targets, AEM must be available and implemented to an adequate extent. Target-orientated funds must be made available or reallocated from the Pillar 1 budget to finance these measures, especially funds for EFA management, Natura 2000 sites and other high-value natural areas (e.g. ecologically valuable grassland). Based on the mean size of Pillar 1 of the CAP the financial requirement in Germany amounts to some 840 M Euro/year or 15 % of Pillar 1 funding.
- In addition to the costs for these AEM, funds are also required for processing, consulting and controls, other Natura 2000, investment-related measures (such as bogland and water body renaturalisation) as well as public relations, monitoring and maintenance support.
- A 100 % EU funding must be available for those dark green AEM that serve efficient greening on EFAs, as well as those dark green measures that are in the interest of Europe as a whole (in particular promotion of species-rich extensive grassland, in Natura 2000 sites for instance, as well as investment-related measures for implementation of the WFD and Natura 2000 management); only with 100 % funding EU member states can offer these measures to an adequate extent.

¹⁴It is assumed that a further 5 % of EFA exist - made up of landscape elements, terraces, buffer strips that do not require AEM.

¹⁵Basis for the cost estimate: (5 % of all arable land = 595.000 ha x 400 Euro/ha = 238 M Euro) + 20 % of grassland areas = 929.000 ha x 250 Euro/ha = 232 M Euro) + operational planning (10 % of the AEM costs = 47 M Euro) + control and management costs (some 10 % of the projected costs = 52 M Euro) + other Natura 2000 and WFD costs (=270 M Euro) = 840 M Euro/year = 15 % of Pillar 1 funds amounting to some 5.7 Bn Euro; greening funds = 30 %.

Core recommendations

In a research and development project "Reform of the CAP 2013 and achievement of the biodiversity and environmental goals" an analysis was made of the expected effects of the CAP reform on the biological diversity and the environment, and proposals were developed for a CAP more compatible with nature and the environment.

It became clear that the European Commission with its CAP proposal of October 2011 has created a basis for improvement to the better achievement of environmental and biodiversity targets, in Pillar 1 with the new greening instrument (and above all the EFAs) and in Pillar 2 with the new EAFRD regulations. The preconditions for visible and measurable success require however a target-orientated configuration and implementation of the greening components and the availability of adequate funding for a management of the areas that is both good for the environment and promotion of biodiversity.

The following key points are of central importance for the further concrete development of the Commission's proposals of October 2011:

- The greening component represents the most important proposal towards a wide scale anchoring of ecological benefits through the CAP. In order for greening to develop its impact, it must above all be implemented by all farmers, in every part of the countryside, especially in the intensively farmed regions where deficits in biodiversity and the environment are most pronounced. The granting of all direct payments must therefore be tied to compliance with the greening regulations. Deliberate, large scale or grossly negligent violations of the greening conditions must be sanctioned up to and including loss of all direct payments.
- Within the greening measures in the CAP an optimal implementation of the Ecological Focus Areas (EFAs) is most important. The 7 % Ecological Focus Areas (EFA) proposed by the Commission represent a minimal solution from a conservation and environmental

viewpoint, which requires an optimal specialist conservation management in order to achieve an efficient impact on biological diversity. This EFA management must be financed 100 % by the EU.

- In respect of permanent pastures, ploughing-up must be restricted to exceptional cases, should require a permit and should have a retroactive effect from 2011. A minimum percentage per farm of 20 % extensive grassland should be stipulated and additionally funded with agri-environmental measures (AEM).
- In respect of crop rotation the maximum percentage of a single crop should be reduced to 50 % and a minimum number of four crops laid down, further a minimum percentage of legumes of 5 % should be introduced.
- The greening requirements should also be extended to include organic farms. Especially in respect to EFAs and permanent pastures additional positive effects are to be expected.
- An earmarked reallocation of funds to the amount of at least 15 % of the direct payments from Pillar 1 to Pillar 2 for an adequate management support of greening is necessary, in order to implement management measures (e.g. special AEM) on EFAs, Natura 2000 sites and semi-natural extensive permanent pastures ("Measures of Special and Overlapping European Interest").
- Within the framework of Pillar 2 also substantial changes are necessary: The so-called "dark-green" measures should become a main part of the agri-environmental programmes. An explicit promotion of result-orientated measures, agri-environmental planning for farms as well as marketing and quality support measures for ecologically valuable parcels should be enhanced.





Imprint:

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The research & development project "Reform of the Common Agricultural Policy (CAP) 2013 and achievement of the biodiversity and Environmental goals" was sponsored by the German Federal Agency for Nature Protection (BfN) with funds provided by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.



October 2012

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Design & Realisation:

schmidt+schmidt, advertising agency gmbh, Fürth