Farmland biodiversity and the Common Agricultural Policy (CAP)

Davy McCracken

Key Points

- Farmland is one of the dominant land covers in Europe, covering over 45% of the European Union’s 27 Member States. Consequently, some of the most critical conservation issues today relate to changes to traditional farming practices on a variety of habitats.
- Agricultural modernisation and intensification in many areas of Europe over the last 60 years have had significant impacts on the biodiversity value of farmland, but in some areas it has not been possible to intensify farming practices to the same extent. These areas contain a patchwork of semi-natural and natural habitats and farmland is more varied. This is termed High Nature Value (HNV) farmland and it can now mostly be found in livestock grazing systems in the mountains and other remote areas of Europe, including Scotland.
- A range of approaches exist to address the continuing decline in farmland biodiversity, including the Natura 2000 Network of protected sites. Reforms to the Common Agricultural Policy (CAP), particularly since 2000, have changed the EU system of farm support, with farmers now required to undertake mandatory environmental cross-compliance in order to qualify for the Single Farm Payment in Pillar I. A focus on agri-environment schemes is also evident in Pillar II.
- Despite the increasing emphasis placed on addressing farmland biodiversity concerns, Natura 2000 sites only cover a small proportion of farmland. Also, the level of funds available through the CAP’s Pillar II has not increased markedly and this money is subject to an ever-increasing range of demands. HNV farms across Europe continue to be under threat from both intensification and abandonment, with a subsequent loss in farmland biodiversity. Conversely, already intensified farms have generally not made the large-scale changes to their farming systems which are necessary to produce the conditions required for farmland biodiversity to recover.
- A recent EU-funded research project\(^2\) has assessed the obligations falling on the EU under the Kyoto protocol and the Convention on Biological Diversity (CBD) and has highlighted a range of measures for ensuring that farmland biodiversity concerns are addressed at an appropriate scale to be effective, including: the need to raise awareness that changes to CAP are required to adequately address farmland biodiversity concerns; placing more on the farm as the most appropriate scale at which to focus the actions required; establishing broad priorities to help with

\(^1\) Dr Davy McCracken is a Reader in Agricultural Ecology and Team Leader of the Resource Economics and Biodiversity Team at SAC. He is an Associate of the Rural Policy Centre. T: 01292 525299; E: davy.mccracken@sac.ac.uk; W: http://www.sac.ac.uk/ruralpolicycentre/aboutus/rpcassociates/davymccracken/.

the targeting of actions, such as, addressing the simplification of landscapes and the increasing pressures being put on HNV farming systems, farmland bird populations and semi-natural vegetation. This could be achieved by taking a three tier approach, including both mandatory and voluntary actions.

- In Scotland, as elsewhere in Europe, concerns about declines in farmland biodiversity have raised questions about how actions can be better targeted and funded. In addition to payments for environmental enhancement, there is a need for efficient and effective regulation to ensure that further biodiversity declines are avoided. A robust evidence base is also required to inform any policy changes and to ensure that the outcomes being sought can be achieved by the changes being implemented.

**Introduction**

Farmers and their farming practices are needed to maintain and improve conditions for habitats and species of European farmland biodiversity concern. However, it is also clear that despite a growing emphasis on farmland biodiversity concerns, without further major changes to the way that Common Agricultural Policy (CAP) support is targeted then farmland biodiversity will continue to decline across Europe. This Policy Briefing draws on the findings of a DG Research funded project to highlight a range of measures that could be taken to ensure that farmland biodiversity concerns are addressed in the CAP at an appropriate scale to be effective.

**The European context**

Europe’s countryside and cultural landscapes have been shaped by farming for centuries. Farmland, including arable land and permanent grassland, is one of the dominant land covers in Europe, covering over 45% (173 million hectares) of the European Union (EU) 27 (EU-27) Member States. It has been estimated that 50% of all species in Europe depend on agricultural habitats (Kristensen, 2003). Consequently, some of the most critical conservation issues today relate to changes in traditional farming practices on habitats such as hay meadows, lowland wet grasslands, heathlands, chalk and dry grasslands, blanket bogs, moorlands and arable land. The majority of these habitats have been created, and need to be maintained, by farming. In most cases taking the land out of agricultural production is not the appropriate choice for biodiversity conservation, and instead it is vital to ensure that the intensity of agricultural management is appropriate (Bignal & McCracken, 1996).

European agriculture is very diverse, ranging from large specialised commercial holdings to part-time farming using mainly traditional practices. Agricultural modernisation and intensification over the last 60 years has had significant impacts on the biodiversity value of Europe’s farmland. The mechanisation of agriculture has facilitated the elimination of many landscape elements, such as hedgerows, the drainage of wetlands and the ploughing of semi-natural grasslands. Species richness and habitat diversity have also declined due to related factors such as increased pesticide and fertiliser use, the simplification of crop rotations, increases in livestock grazing densities and changes to the timing of grazing, cutting and cropping practices. This development of intensively-managed agricultural land has affected all agricultural sectors and has occurred across most of the lowland areas of Europe, although it has been especially dominant in the north and west (Henle et al., 2008).

There are, however, still areas of Europe where soil, climatic, economic and policy constraints have meant that it has not been possible to intensify farming practices to the same extent. Such areas generally contain more of a patchwork of semi-natural and natural habitats and the farmland is more varied and subject to a greater range of management intensities. This leads to the farmland and associated habitats containing a higher biodiversity value than those in the areas where intensification has occurred. What is termed High Nature Value (HNV) farmland still occurs in association with traditional cropping systems in southern Europe and in association with the use of machair for cropping by crofters in Scotland. However, in

---

1 Machair is a Gaelic word meaning an extensive low-lying fertile plain but specifically the long ranges of sandy plains fringing the Atlantic side of the Outer Hebrides. It is a coastal feature, which only occurs under certain climatic, physical and landform conditions. Sand is blown inland onto a low-lying plain. Machair grasslands largely owe their fertility to the high seashell content.
general the majority of Europe’s remaining HNV farming systems are now largely associated with livestock grazing systems on semi-natural habitats in the mountains and other remote areas of Europe (McCracken et al., 2005; McCracken & Midgley, in press).

Addressing the decline in farmland biodiversity

Nature conservation policies

The main policy instruments for site protection at EU level are the Birds and Habitats & Species Directives (79/409/EEC, 92/43/EEC) and the associated EU-wide network of representative protected sites (the Natura 2000 Network). A large proportion of the Natura 2000 Network is on farmland, which can generally be assumed to be of a high nature value. Across the EU-27, targeted habitats that depend on extensive farming cover about 15% of the terrestrial part of Natura 2000 sites. Measures taken for the conservation of habitats within these sites have the potential to make a considerable contribution to the goals of maintaining HNV farming, if implemented effectively and at a sufficient scale (European Environment Agency [EEA], 2009).

However, the HNV farming concept also emphasises that biodiversity conservation goals in Europe will not be met by only protecting particular habitats or species, or designating certain areas for their management. There is also a need to maintain low-intensity agricultural land uses that favour the dynamics of natural processes and create opportunities for biodiversity to flourish across large, contiguous areas of land. Such maintenance on a large-scale across is necessary in order to provide a vital complement to conservation objectives within the Natura 2000 network (EEA, 2009).

Halting Biodiversity Loss by 2010

The Convention on Biological Diversity (CBD) was signed in Rio de Janeiro in 1992. In 2002, the CBD Conference of Parties adopted the goal of achieving a significant reduction of the current rate of biodiversity loss at the global, regional and national level by 2010. The EU Member States went further and in 2002 declared their own goal of halting the loss of biodiversity by 2010. Although there are no specific CBD objectives related to agricultural biodiversity, in Europe agriculture and agricultural biodiversity are considered to be important components of the 2010 target (Zdanowicz et al., 2005).

In 2006 the EEA highlighted that progress towards achieving the EU’s commitment to halt biodiversity loss on farmland in Europe by 2010 was unlikely to be reached without additional integrated policy efforts (EEA 2006). In recognition of this, the European Commission’s Biodiversity Communication in 2006 (Commission of the European Communities [CEC], 2006) highlighted that their strategy for halting biodiversity loss on farmland by 2010 and beyond would focus on:

- putting greater emphasis on action for Europe’s most important habitats and species through protecting and managing effectively the Natura 2000 Network of protected areas;
- putting greater emphasis on complementing Natura 2000 and the conservation of threatened species through also encouraging agri-environment actions favourable to biodiversity on land outwith protected areas (the so-called wider countryside).

Although the Biodiversity Communication placed an emphasis on taking action to address farmland biodiversity concerns (through, for example, optimising the use of agri-environment schemes and preventing intensification or abandonment of HNV farming systems), the main thrust was on encouraging Member States to use existing policy and support mechanisms to help achieve this.

of the sand - sometimes as high as 90%. Crofting is the name given to a farming system which occurs in the Highlands and Islands of north-west of Scotland which consists of small-scale farms (crofts) growing crops and rearing livestock and often involving the use of moorland grazings which are managed and used in common by a number of individual crofts. For more information, see: http://www.efncc.org/hnv-showcases/scottish-hebrides/machair/facts/.
Changes to agricultural support mechanisms

The Common Agricultural Policy (CAP) and associated national agricultural policies have been the main drivers behind the land use and farming practice changes which have impacted on Europe’s farmland biodiversity. The CAP initially aimed to increase productivity and provide more food at a lower cost for EU countries, while also achieving a fair standard of living for farmers. This was achieved through stabilisation of markets (through a single market with common prices) and a more autonomous approach with less reliance on imports and preference given to Member States as well as free movement of goods (Young et al., 2005). However, by the 1980s, the CAP and its market and structural support policies were held responsible for increasing habitat degradation, overproduction of food products, intensification of farming practices, and the concentration of production from fewer, more specialised farms (Bignal et al., 2001).

In the early 1980s, measures were introduced to control surplus production and also to provide compensation to farmers for loss of income as a result of their adopting environmentally sensitive forms of farming. The subsequent 1992 CAP reform further recognised the environmental role of farming by increasing the availability of agri-environmental schemes across the EU. In 1998, the Agenda 2000 reform took these shifts further and introduced a set of minimum environmental requirements which are applied to all farmland subject to CAP support payments (i.e. what is known as environmental cross-compliance), as well as the opportunity for farmers to obtain support (under the Rural Development Regulation) for additional activities other than farming per se.

The review of the CAP in 2003 removed the focus on production and increased the focus on environmental concerns. Consequently, since 2005 most financial support provided to farmers is no longer dependent on them growing specific areas of crops or retaining a certain number of animals. Instead, farmers receive a Single Farm Payment, provided that they undertake to comply with a suite of EU Directives (including the Birds and Habitats & Species Directives) and keep their land in Good Agricultural and Environmental Condition (GAEC). In addition, the majority of farmers have seen the level of their Single Farm Payment decrease to allow Member States to fund an increase in the amount of funding available via rural development measures (McCracken & Klockenbring, 2007).

The most recent reform of the CAP in 2005 represented a radical change in the system of farm support provided within the EU. This largely reflected two of the demands from environmental organisations namely, the removal of the need for farmers to have a particular area of crops or number of animals in order to qualify for CAP support, and mandatory environmental cross-compliance for all sectors supported by direct payments. The retention of a focus on agri-environment schemes in the rural development measures was good in principle. However, the reforms have to-date done little to address the question of whether or not the programmes themselves have been effective in achieving their biodiversity objectives. The ecological complexity of farmland and the fact that no two farms are the same has been difficult to address, as has making clear the distinction between HNV farming and the more impoverished systems of management and production associated with intensively managed areas (Bignal & McCracken, 2000).
The current situation

In Scotland, as in the rest of the EU, it is clear that halting biodiversity loss on farmland by 2010 has not been achieved. The continuing decline has occurred despite an increasing emphasis on biodiversity and wider environmental concerns at an EU, Member State and local level over the past 25 years. However, the focus on Natura 2000 sites only covers a small proportion of farmland biodiversity concerns. The site protection measures employed to date at best conserve a minority of HNV farmland and do not necessarily appear to be targeted at areas of high farmland biodiversity potential within the more intensively managed agricultural landscapes. Moreover, the level of funds available in Pillar II of the CAP (the main funding route to support agri-environment measures to help address biodiversity concerns on farmland) has not increased markedly (e.g. Farmer et al., 2008; EEA, 2009). In addition, the increasing emphasis on other environmental concerns (such as mitigating climate change and addressing diffuse pollution) has also increased competition for the already limited Pillar II funds. As a result, across Europe, HNV farming systems continue to be under threat from both intensification and abandonment of farm management practices, with a subsequent loss in farmland biodiversity value. Conversely, already intensified farms have generally not made the large-scale changes to their farming systems which are necessary to produce the conditions required for farmland biodiversity to recover.

Farmers and their farming practices are needed to maintain and improve conditions for habitats and species of farmland biodiversity concern. The amount of income that these farmers can obtain from CAP and market sources continues to drive farm management decisions and affect the overall viability of each farm. Under the current CAP, there have been no major shifts in support payments from one area of Europe to another or from one type of farmer to another. Hence, the overall amount of income that can be obtained from HNV farming systems has remained low and such farmers continue to be under pressure to either intensify their farming practices (to increase overall income levels) or abandon farming practices altogether (to reduce their overall burden of costs and maximise the level of support payments that they can retain as income). The biodiversity value of HNV farming systems (mainly occurring now in the less productive mountain areas across Europe, in central and eastern Europe and in the Mediterranean) has continued to decline.

At the same time, the more intensive, and hence biodiversity poor, farms which occur across most of lowland Europe and the more easily accessible uplands have (through modulation of the Single Farm Payment) seen a reduction in their main source of support and many have sought to compensate for this through maximising their income from Pillar II funds. However, with increasing pressure on both the income made from farming and for farmers to address other environmental concerns, many intensive farmers have been reluctant to spend time and money additionally addressing farmland biodiversity issues. Many see these as complex to implement and/or removing productive land from their farms. Hence, the marked increases in habitat diversity which are required to increase biodiversity in and around fields on intensive farms have not occurred naturally.

What more could be done: evidence from the MEACAP project

A European Commission funded Specific Targeted Research Project (STREP) entitled “MEACAP: impact of environmental agreements on the CAP” has assessed the exact obligations falling on the European Community with respect to agriculture in the fulfilment of commitments under the Kyoto Protocol and the Convention on Biological Diversity. The project was coordinated by the Institute for European Environmental Policy and conducted in partnership with seven other European Institutes. SAC contributed to this project through a sub-contract to the University of Humboldt in Berlin and together these two institutes were responsible for a workpackage which dealt specifically with Analysis and measures for delivering CBD commitments in agriculture (McCracken et al. 2005; McCracken & Klockenbring, 2007).

Landscape simplification is the key driver of biodiversity declines but it is also clear that this cannot be addressed at the scale required solely by using agri-environment schemes within the Pillar II Rural Development Programme. However, landscape simplification could be addressed, and the limited Pillar II
funds used more effectively, if all farmers were required to do more in order to qualify for Pillar I support. In this way, the onus could be put on all farmers to achieve a minimum level of appropriate habitat diversity and/or management at the farm scale in order to qualify for their Single Farm Payment and become eligible for additional Pillar II funding for additional specific actions. Such an approach would potentially increase the general biodiversity value of the more intensified farmland and increase the probability of more targeted agri-environment actions achieving their biodiversity goals. It should also mean that farms of existing HNV would be able to benefit from the types of habitats already forming part of the on-farm resource, and hence would be able to meet the qualification requirements.

The main messages arising from the consideration of biodiversity issues within the MEACAP project and which have been highlighted for potential consideration for incorporation into further reforms of the CAP (McCracken & Klockenbring, 2007) are therefore:

- There is a need to raise awareness that marked changes to CAP support mechanisms are required in order to address farmland biodiversity concerns adequately. In addition, there is a need to put more of an emphasis on the farm as being the most appropriate scale at which to focus the actions required.
- Farmland biodiversity concerns are potentially many and varied, and as a result, much of the action to date to try and address these has been spread very thinly. Establishing broad priorities could help with the targeting of actions and ensure that sufficient attention is devoted to each. To this end it is recommended that greater attention should be placed on addressing:
  - The simplification of agricultural landscapes;
  - The increasing pressures being put on HNV farming systems;
  - The documented declines in farmland bird populations;
  - The pressures being put on semi-natural vegetation.

- It is suggested that this could be achieved effectively by taking a three-tier approach:
  - **Tier I: Improving the biodiversity value and potential of agricultural landscapes:** This would be mandatory and would be designed to ensure that all farmers in receipt of CAP support were required to take action on the ground to maintain or improve the basic biodiversity value and potential of the agricultural landscape of their farm. Under this Tier, basic cross-compliance requirements would be strengthened and each farm would also be required to have a proportion of the farm classed as Ecological Priority Areas. Cross-compliance could be strengthened by putting emphasis on achieving greater protection for watercourses by stipulating a five metre minimum distance from ditches, streams, watercourses and waterbodies where no ploughing, fertilisers or pesticides were allowed. In addition, greater protection could be given to other existing features and boundary habitats of biodiversity value (such as trees and hedgerows) by ensuring that they are maintained in good condition and/or establishing buffer zones around such features.

Making it mandatory for farms to be required to have, or to establish, at least 7% of the farm’s utilised agricultural area as Ecological Priority Areas, is based on a similar approach to that taken in Switzerland. The five metre buffer zones alongside watercourses could qualify towards this proportion, as could habitats of greater biodiversity potential (e.g. species rich grassland) and areas of pasture, meadow and annual and permanent crops under more extensive management on the farm.
Tier II: Providing support for particular farming systems of biodiversity value: Farmers would sign up to this voluntarily and it would be designed to target support to two main farming systems of proven biodiversity value, namely HNV farming systems and organic farming.

HNV farming systems are currently a policy priority and likely to remain so in the CAP post-2013. The main rationale behind the support available under this Tier would be to help maintain the HNV status of such farming systems and increase the financial viability of the farms themselves (and thereby prevent abandonment or intensification of the farming practices). This does, however, require each Member State to be able to identify, target and maintain the HNV resource within its borders. This would currently be difficult to achieve in practice given the current lack of detailed knowledge of HNV locations in some Member States. However, work is currently ongoing across the EU to identify the types of HNV farming systems occurring within each Member State using guidance from DG-Agriculture on the characteristics that can be used to easily identify an HNV farming system from a conventional farming system.

There is increasing evidence that organic farming practised at a whole farm scale can be beneficial to a variety of groups of farmland biodiversity concern. However, not all organic management provides automatic biodiversity benefits and the intensity of management practices on some organic systems can be just as detrimental to farmland biodiversity as conventional practices. Hence, in order to increase the biodiversity benefits to be gained from such a focus, the current European organic status requirements and any amendments would not only need to be applied more stringently across Europe but would also potentially need to incorporate additional restrictions on grazing densities and nutrient input levels at the field/farm scale in order to better reflect biodiversity concerns.

Tier III: Providing support for specific measures of biodiversity value: Again, farmers would sign up to this voluntarily and it would be designed to target support to specific measures considered to be important in helping address regionally-distinctive biodiversity concerns at the farm level. The type of detailed measures that would be relevant to implement would however depend on the specific farming system, location and biodiversity issues of concern. More details on the type of measures that could be utilised under this tier are provided in McCracken & Klockenbring (2007).

Tier I would therefore help to improve the underlying habitat diversity occurring in many agricultural landscapes, Tier II would recognise and help highlight that in reality action at a whole farming system level is ideally the best approach to maintaining or improving biodiversity on any farm, while Tier III would allow for appropriate action to be targeted at specific issues of biodiversity concern on individual farms irrespective of their management intensity status. Tiers I and II would therefore help serve to improve the overall biodiversity potential of agricultural landscapes and thereby increase the success of any specific actions taken at Tier III level on a farm.

In Scotland, as elsewhere in Europe, concern about farmland biodiversity declines has raised questions not only about how biodiversity actions on farmland can be better targeted but also about how this can be best achieved and funded. There is therefore a need for a fundamental rethink as to how actions to benefit biodiversity on farmland are targeted and supported. The MEACAP project has highlighted a range of measures for ensuring that farmland biodiversity concerns are addressed at an appropriate scale to be effective. However, in addition to any payments for environmental enhancement, there is also an associated need for efficient and effective regulation to ensure that Scotland’s biodiversity is not degraded through agricultural production. Hence, any changes to cross-compliance conditions will only be effective drivers of positive land-use change if these are backed-up by appropriate monitoring and enforcement of those conditions. Any future change in the structure of the funding for achieving European farmland biodiversity goals will, however, require a robust evidence base to inform that policy change and to ensure that the desired biodiversity outcomes can be achieved by the changes being implemented (McCracken & Midgley in press).

This document includes results obtained within the EU project SSPE-CT-2004-503604 MEACAP: Impact of Environmental Agreements on the CAP (http://www.ieeplondon.org.uk/projectminisites/meacap/index.php). It does not necessarily reflect the views of the European Commission and in no way anticipates the European Union’s future policy in this area.
References and further reading


More information on the Rural Policy Centre is available from:

Jane Atterton, Researcher, Rural Policy Centre, SAC, Kings Buildings, Edinburgh, EH9 3JG.

T: 0131 535 4256; E: jane.atterton@sac.ac.uk; W: [http://www.sac.ac.uk/ruralpolicycentre/](http://www.sac.ac.uk/ruralpolicycentre/)