



**Funding for Farmland Biodiversity in the EU: Gaining Evidence for
the EU Budget Review**

Case Study Reports

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June 2008

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1 Introduction

This report includes the full text of the five qualitative case studies written for this project, as well as an extended outline of the methodological approach to this part of the study. The findings of the case studies have been synthesised and included in the main report. The primary purpose of these case studies is to make an ex-ante assessment of the extent to which particular measures within the rural development programmes are likely to provide for the conservation of farmland biodiversity. This involves an analysis of the underlying objectives of the measures to be implemented, and a consideration of the extent to which the environmental impact of different measures has been taken into account by the selection of Member States considered here. The implementation of cross compliance and Article 69, under the Pillar 1 regulation, are also considered. A more detailed examination of the impact of CAP payments models (historic, regional, hybrid) and the eligibility criteria for CAP payments (e.g. whether farmland features such as field trees should be omitted from the claimed area) was considered too detailed for inclusion in this study.

1.1 Case Study Methodology

Five case study regions/countries were selected for further examination of CAP expenditure. These were: Finland; Hungary; Portugal; the Navarra region of Spain and, England, part of the United Kingdom. In selecting case studies, the aim was to include countries that gave a good geographic spread e.g. North West European, Mediterranean and Central and Eastern European. The intention was to include different types of farming systems, climatic regions, biodiversity interest and approaches to rural development. The selection of case study countries was somewhat constrained by the availability of approved 2007-2013 Rural Development Programmes (RDPs). At the time of selection, only a number of RDPs – setting out definitive expenditure plans and selected measures on which to base any analysis - had been approved by the European Commission. There were also some language constraints with some RDPs only available in national languages. The final selection offers a good range of countries but cannot be said to fully represent the many different approaches to Pillar 2 expenditure adopted by the EU 27. Partners within the BirdLife network were given the opportunity to read and comment on each of the case study reports.

For each case study country/region, an assessment was undertaken of both Pillar 1 and Pillar 2 expenditure. The analysis sought to identify the three different types of expenditure:

- Expenditure likely to lead to direct benefits for farmland biodiversity.
- Expenditure likely to lead to indirect benefits for farmland biodiversity.
- Expenditure likely to lead to negative impacts (directly or indirectly) on farmland biodiversity.

The Direct and Indirect Impacts of the CAP on Biodiversity

When considering the effects of policies and the funds linked with them on the environment, it is necessary to look for a causal link between the policy, farming responses and the environmental effects those responses give rise to. Any assessment should take into account the fact that some CAP measures have specific biodiversity objectives and are intended to lead directly to biodiversity benefits. This is likely to be expenditure which is specifically targeted at delivering environmental outcomes, e.g. agri-environment schemes which pay farmers/land managers to undertake specific activities which will benefit biodiversity. Such activities might include following certain grazing regimes, managing farmland features such as hedgerows and restricting the use of pesticide and fertilisers. Other CAP measures have socio-economic objectives but, due to the way the funds are applied, may lead to indirect benefits to biodiversity. An example are payments made under the Less Favoured Area measure which helps to support extensive farming in marginal farming areas. The maintenance of such farming systems in areas which are often of High Nature Value is often indirectly beneficial to biodiversity. Other CAP funds may be applied in such ways that they give rise to negative impacts on biodiversity. This is likely to be expenditure which is applied to achieve economic or social objectives but may incentivise the intensification and specialisation of farming systems and practices. If no environmental controls or conditions are applied to such expenditure, negative environmental impacts can occur.

The Pillar 1 analysis in the case studies focused on the application of the Single Payment Scheme (SPS) or Single Area Payment Scheme (SAPS) in 2006 and not other components of Pillar 1 such as market measures. The elements of particular interest were as follows:

- Member States have adopted different payment models for SFP within the rules laid down by the European Commission. Payments can be made on an historic or regional basis or a hybrid of the two. Member States were also given the option of partial decoupling, allowing some CAP payments to remain linked to production. The types of farming favoured by these different payment models and the spatial distribution of funding are likely to have a bearing on farmland biodiversity. For example, the retention of the suckler cow premium by some Member States may help to support extensive beef systems, the decline in which could be negative for farmland biodiversity.
- Article 69 of Regulation 1782/2003 allows Member States to use a proportion of direct payments (by sector) to make additional payments for specific types of farming which are important for the protection or enhancement of the environment. These so called ‘national envelopes’ can therefore be used to indirectly benefit farmland biodiversity.
- Farmers in receipt of direct aid have to respect statutory management requirements (SMRs) and good agricultural and environmental condition (GAEC)¹ which together form the cross compliance system. GAEC could, potentially, have direct biodiversity benefits e.g. by requiring the

¹ Farmers in receipt of SAPS currently only have to comply with GAEC and not SMRs. All new Member States except Malta and Slovenia apply SAPS. Farmers in all other Member States in receipt of SPS must comply with both SMRs and GAEC.

establishment of 2m margins around fields or alongside watercourses. Other GAEC may, like SMRs, help to prevent any negative environmental effects of farming.

Pillar 2 information was extracted from National Strategy Plans (NSP) and Rural Development Programmes (RDPs) for the 2007-2013 programming period. Analysis has focused on:

- What the NSP states in term of priorities and objectives for biodiversity and the environment
- The break-down of expenditure across the four Axes and within Axis 2, by measure
- The detailed schemes and measures to be implemented through the RDPs and the extent to which they are likely to directly or indirectly benefit biodiversity or may have negative impacts on biodiversity.

Measures of particular interest are:

Measures which may directly benefit biodiversity	Measures which may indirectly benefit biodiversity	Measures which may have negative impacts on biodiversity
Agri-environment	Natural handicap payments in mountain areas	Farm modernisation
Natura 2000 payments and those linked to Directive 2000/60/EC	Payments to farmers in areas with handicaps (other than mountain areas)	Afforestation of agricultural land

2 Case Study Report: England, UK

Author: Vicki Swales

Introduction²

England is a country of some 50,351 square miles (130,410 square kilometres), and had a total population of 50.1 million in 2004. Roughly, 19% of the population in England lives in rural areas, using the rural definition (a National Statistic used for England and Wales) and data from the 2001 Census. England has borders with Scotland of 60 miles (95 km) and with Wales of 150 miles (240 km), and 5,325 miles (8520 km) of coastline. The population of rural England is growing and ageing at the same time and this is taking place at a faster rate than urban areas.

Over 70 per cent of the total England land area is under agricultural uses. Some 9.3 million hectares of land are used for agriculture of which: 4.3 million hectares are croppable land; 3.3 million hectares are permanent pasture and 0.3 million hectares are woodland. There are just over 15.5 million sheep and lambs in England, around 5.4 million cattle and 4 million pigs. Pastoral based systems dominate the uplands and lowlands of the North, Welsh borders and South West and mixed and arable cropping systems dominate central, eastern, southern and South East England.

Approximately two-thirds of farms are owner-occupied. There are 195,900 holdings in total. The average farm size, for farms above the threshold of 8 Economic Size Units (the minimum size for a full time farm) is 112.7 ha, above the EU average for both EU 15 and EU 27 Member States. There are 26,800 large farms (over 100 ha) covering 6.3 million ha. However, there are 122,800 holdings below 8 ESU reflecting an increasing trend of part-time, lifestyle or hobby farming and equestrian activities.

Woodland cover of England has increased steadily from the early part of the 20th Century. However, although it has risen by 70% over this period the proportion of woodland cover is still only 25% of the EU25 average. Between the 1950s and 1980s, afforestation was dominated by the planting of exotic conifer species but from 1985 onwards much greater emphasis was given to broadleaf species. Some 21.8 % of woodland is state owned while 47.1% is in the hands of private owners. Almost 40% of private owners have woodlands of less than 20 ha.

Due to the long-history of agricultural production, the majority of valued species rely on habitats that result from low-intensity agriculture. Wild bird populations are considered to be a good indicator of the overall health of large scale ecosystems, and the index of farmland birds is a UK biodiversity indicator and an EU Common Baseline Indicator. Since the mid 1970s, farmland bird populations have seen significant decreases of nearly 50%, reflecting the scale of changes in agricultural practices and the farmed landscape in recent decades. Amongst the farmland birds, it is the farmland specialists, those species that breed solely or mainly on farmland, that have suffered the sharpest declines. However, more recently farmland bird populations appear to have stabilised, with little change since 1996. Rare bird populations, which are not included in this index, have been stable or rising reflecting

² The following information is summarised from the 2007-2013 Rural Development Plan for England.

conservation effort. Although woodland bird populations have shown a rather less marked decline than farmland birds, there has still been a decline of about 20%, though the overall decline again appears to have halted during the 1990s. Evidence suggests that overall, woodland specialist species and those characteristic of open spaces within woodlands seem to be doing less well than woodland generalists.

The RDP identifies biodiversity as an area where, despite the achievements to date, there is still a need for large scale action at all levels, to secure the management necessary to maintain and restore the condition of protected areas, including Natura 2000 sites, to meet the targets for Priority Habitats and Species and to improve the overall condition of the wider farmed environment. Most of this requires active management by land managers. Rural development measures are also highlighted as important in dealing with water and air pollution, supporting woodland management and expansion and contributing to the mitigation of, and adaptation to, climate change.

Pillar 1

In England, the decision was taken to introduce the Single Payment Scheme as a hybrid model. Initial payments were based on historic subsidy receipts and over time are moving to a flat rate payment per hectare (by 2012) applying in three different regions (the moorland within the upland Severely Disadvantaged Areas, land in the upland SDA but outside the moorland line and all land outside the upland SDA).

Farmers in receipt of the SPS must comply with certain conditions under the system of *cross compliance*. For the five main 'environmental' SMRs (including the Birds and Habitats Directives), England has defined obligations that farmers must comply with. In 2005, 8.7% of inspected farms in England were found to have breached one or more SMR requirements. The most common breaches were recorded in relation to animal identification and registration rather than the environmental SMRs. Given the lack of evidence at this stage, it is not possible to say whether SMRs are delivering any additional benefits to biodiversity, or the environment more generally, compared to the situation pre cross compliance.

GAEC

GAEC requirements were introduced after extensive consultation with stakeholders including a full public consultation and farmer workshops and a Regulatory Impact Assessment.

In relation to GAEC soil issues, the following general standards were introduced:

1. General Requirements (includes requirement for risk-based Soil Protection Review which must be in place by 2006, implemented from 2007 and updated at least once in 2007 and in each subsequent calendar year)
2. Post-harvest management of land after combinable crops (from harvest to 1 March) to ensure either stubble or a cover crop remains
3. Restrictions regarding water logged soils e.g. preventing mechanical field operations under certain circumstances
4. Prohibition on burning certain crop residues after harvest

Together, these soil standards provide a comprehensive approach to the management of soils and should help to combat problems such as soil erosion where they occur. This is likely to have a range of indirect benefits to biodiversity e.g. reducing soil runoff and siltation of water courses thereby improving water quality.

A further 12 GAEC standards have been established under the heading of 'Maintenance of habitats and landscape features'. A number of these are of particular relevance to the conservation of biodiversity, including:

- GAEC 5 – Environmental Impact Assessment
- GAEC 6 – Sites of Special Scientific Interest
- GAEC 9 – Overgrazing and unsuitable supplementary feeding on natural and semi-natural grassland
- GAEC 10 – Heather and Grass Burning
- GAEC 14 – Protection of Hedgerows and watercourses
- GAEC 15 – Hedgerows
- GAEC 16 – Felling of trees
- GAEC 17 – Tree Preservation Orders

Various requirements are likely to be of direct benefit to biodiversity notably those seeking to prevent overgrazing on natural and semi-natural grassland, the requirements for 2m margins alongside hedgerows and watercourses and restrictions on the timing of cutting hedgerows (avoiding the main breeding season for birds). Most of these requirements existed pre-cross compliance and hence farmers were already required to comply with them under national legislation. The additional benefit of cross compliance arises – theoretically - from the inspection process and the incentive given to farmers to comply or face loss of SPS. It is worth noting that GAEC requirements in England are the most numerous and demanding of all EU 25 Member States (based on the recent EU wide evaluation of cross compliance³) and establish a relatively good baseline for protection of the farmed environment.

Permanent Pasture

In England, farmers may plough up permanent pasture for another agricultural purpose as long as they comply with the requirement of the Environmental Impact Assessment (EIA) Regulations (for which a specific GAEC has been established). New woodland can be created on permanent pasture as long as it complies with Forestry EIA regulations and with the UK Forestry Standard. If the extent of permanent pasture declines in England or the UK compared to 2003, then Defra may take steps to prevent further decline. If a 5% decline occurs, Defra states that it may take steps but does not specify what these are. If a 10% decline occurs, farmers may be required to reconvert areas (converted in the previous three years) to permanent pasture and retain the land as permanent pasture for five years. Areas converted to woodland are exempt from this requirement.

³ Alliance Environnement (2007) Evaluation of the Application of Cross Compliance as foreseen under Regulation 1782/2003. Part 1: Descriptive Report and Part 2: Replies to Evaluation Questions. Reports for DG Agriculture

One of the main problems with the cross compliance legislation is that it can only act to maintain the overall extent of permanent pasture. It does not set out to protect particularly important areas of permanent pasture e.g. species-rich grassland and losses of such pasture could occur within the 10% allowable decline. Defra has responded to this potential problem by introducing a GAEC for Environmental Impact Assessment. This means that environmentally important grasslands would need to go through an EIA procedure to determine if it was acceptable to plough this land for alternative agricultural use or make improvements to it for intensive agricultural purposes. In this way, some measure of protection is afforded to habitat of biodiversity value.

Pillar 2

Strategic priorities and objectives

Ensuring a healthy functioning environment which allows economies to grow is the overall strategic approach of the English RDP. It recognises that some public benefits do not have a market value and must therefore be realised through government intervention.

The Programme states that:

‘the needs to be addressed in respect of the environment and the countryside are very significant, and far exceed the resources available to address them, apart from those provided from the rural development regulation. This is therefore the area where the maximum community value added can be obtained from the programme’

The greatest emphasis is therefore given to Axis 2 in order to improve the environment and countryside. Within Axis 2, the agri-environment measure is given highest priority in order to address biodiversity, water and climate change issues in line with EU priorities. The programme states that it will adopt a targeted, investment led approach to implementing measures under Axes 1 and 3, which means being more selective and less demand led. Expenditure is to be focused on complementing and adding value to other sources of funding. The aim of Axis 1 is ‘to help build profitable, innovative and competitive farming, food and forestry sectors that meet the needs of consumers and make a net positive contribution to the environment.’ Axis 3 is focused on measures that will enhance economic development. The programme notes that services in England are of a high standard and any issues related to services will therefore only be addressed where there are genuine service access challenges.

The Programme states that the Leader approach ‘*will be used in the Rural Development Programme for England to mobilise the development potential of rural areas by stimulating innovation (both in approaches to delivery and projects) allowing new solutions to be found to long standing problems, including through the transfer and adaptation of innovations’.*

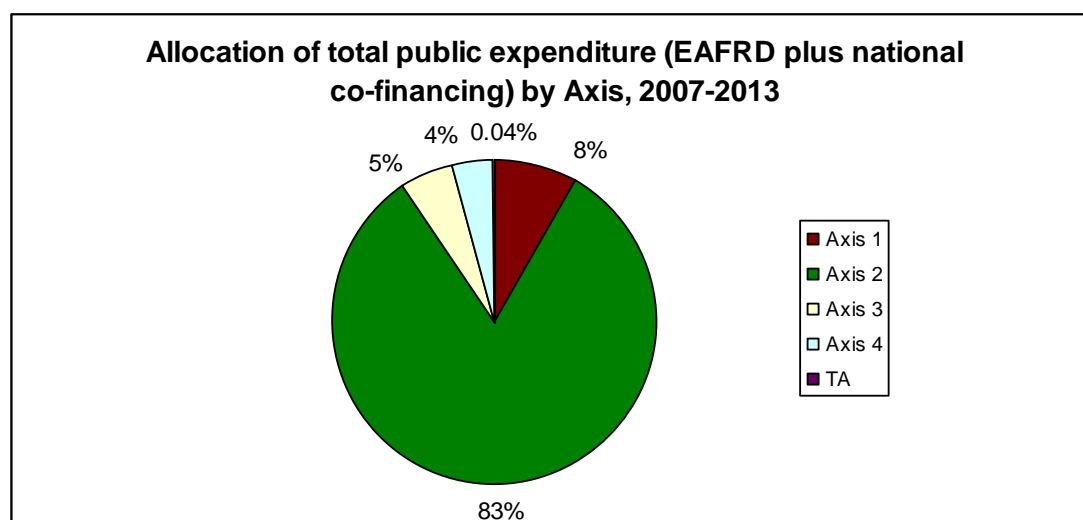
Overall, the environment is given the highest priority in terms of the strategic priorities and objectives for the Programme given the lack of other suitable funding streams to deliver environmental benefits. Economic and social development in rural

areas is recognised as important but capable of being delivered mainly through alternative funding streams.

Funding

Figure 1 shows the allocation of RD spend for the 2007-2013 planning period by Axis and is indicative of the priority given to the above stated objectives. It illustrates that the greatest proportion of funding, and hence the highest priority, is to be given to Axis 2 and the next largest amount to Axis 1 with the smallest amounts allocated to Axis 3 and Leader. Planned expenditure on Axis 2 is almost ten times greater than expenditure on Axis 1. Comparing the spend on Axis 2 relative to spend on Axis 1 in other Member States⁴, England is the second best performing Member State after Finland.

Figure 1. Total Public Expenditure by Axis 2007-2013 for England.



Source: IEEP

Table 1 shows the allocation of expenditure by measure within Axes.

Table 1 Allocated EAFRD Expenditure by Measure for England 2007-2013.

Axis	Measure	EAFRD incl co-financing (Euros)	% of total public expenditure	% of Axis	Private Expenditure (€)	Additional National Financing (€)
2	Agri-environment payments	3,394,387,954	68%	82%		228,955,903
2	Non-productive investments (agriculture)	266,199,825	5%	6%	159,719,895	68,810,109

⁴ Based on approved RDPs to date.

2	Payments to farmers in areas with handicaps, other than mountain areas	237,956,204	5%	6%		
1	Adding value to agricultural and forestry products	150,738,056	3%	36%	97,979,736	
2	First afforestation of agricultural land	149,286,666	3%	4%	44,786,000	38,400,000
4	Local strategies: quality of life/diversification	146,658,172	3%	69%	73,329,086	
3	Diversification into non-agricultural activities	118,176,146	2%	46%	73,269,211	
1	Vocational training and information actions	96,458,226	2%	23%	24,114,557	
1	Cooperation for development of new products, processes and technologies	71,357,974	1%	17%	49,950,582	
1	Modernisation of agricultural holdings	59,686,631	1%	14%	36,408,845	
3	Business creation and development	53,978,484	1%	21%	32,387,090	
2	Non-productive investments (forests)	49,100,000	1%	1%	14,730,000	7,600,000
4	Local action group	42,457,880	1%	20%		
3	Encouragement of tourism activities	38,687,909	1%	15%	22,825,867	
2	Forest environment payments	19,700,000	0.4%	0.5%	5,910,000	22,800,000
2	First afforestation of non-agricultural land	19,343,333	0.4%	0.5%	5,803,000	2,200,000
3	Basic services for the economy and rural population	18,890,139	0.4%	7%	8,122,760	
1	Infrastructure related to development and adaptation	18,426,791	0.4%	4%	10,908,660	
1	Improvement of the economic value of forests	16,763,857	0.3%	4%	10,561,230	
4	Local strategies: competitiveness	12,786,190	0.3%	6%	5,114,476	

4	Cooperation projects	10,614,470	0.2%	5%		
3	Training and information	9,839,250	0.2%	4%	2,459,812	
3	Conservation and upgrading of the natural heritage	9,216,701	0.2%	4%	3,225,845	
3	Skills acquisition, animation and implementation of development strategies	7,321,934	0.1%	3%	1,830,484	
1	Setting up of management, relief and advisory services	4,093,457	0.1%	1%	2,742,616	
1	Use of advisory services	4,020,146	0.1%	1%	804,029	
3	Village renewal and development	224,380	0.004%	0.1%	118,921	

The above table shows that the agri-environment measure receives 68% of all public expenditure on rural development and 82% of Axis 2. The table below highlights those measures that receive the highest levels of funding. The contribution of these measures to the conservation of biodiversity is considered below.

Table 2. Measures in the RDP for England receiving the highest levels of funding.

Measure	Public Funding Allocated €	% of total public funding
Axis 1		
Vocational training and information actions (111)	96,458,226	2%
Adding value to agriculture and forest products (123)	150,738,056	3%
Axis 2		
Agri-environment (214)	3,394,387,954	68%
Payment to farmers in areas with handicaps (212)	237,956,204	5%
1 st afforestation of ag land (221)	149,286,666	3%
Forest environment payments (225)	19,700,000	0.4%
Axis 3		
Diversification into non agricultural activities (311)	118,176,146	2%
Axis 4		
Local strategies: quality of life/diversification (413)	146,658,172	3%

Modulation

In March 2007, the UK (along with Portugal) secured agreement to levy additional modulation above the rate of compulsory EU modulation in order to meet commitments made in relation to rural development measures.

The rate of additional ‘voluntary’ modulation for Single Payment Scheme (SPS) will be 12% for SPS 2007, 13% for SPS 2008 and then 14% for SPS 2009, 2010, 2011 and 2012. Under European rules, receipts modulated in one year from SPS payments are made available for use on rural development funds in the subsequent year i.e. receipts generated from SPS 2007 will be spent in 2008. The overall modulation rates are therefore as follows:

Year	EU Rate	Additional national rate	Overall rate
2007	5%	12%	17%
2008	5%	13%	18%
2009-2012	5%	14%	19%

EU ‘compulsory’ modulation is co-financed at 50:50 for Axes 1 and 3 and at 55:45 for Axis 2. According to Defra⁵, from 2007, in England, 80% of voluntary modulation receipts will be spent on agri-environment measures under Axis 2 of the Rural Development Programme for England. 10% of voluntary modulation receipts will be spent under Axis 1, and 10% under Axis 3. Voluntary modulation spent on Axis 2 measures will be co-financed at an EU: national ratio of 60:40. This means that for every €60 of voluntary modulation spent under Axis 2, the Government will provide a further €40. It is estimated that over the period to 2012, this will result in a net increase in overall CAP spending in England of approximately €1 billion.

Voluntary modulation represents a substantive boost to agri-environment funding in England allowing Defra to meet its commitments in relation to target uptake of agri-environment schemes. Every farmer who ‘loses’ money through compulsory and voluntary modulation will have the opportunity to recoup at least some of it back by entering environmental or other rural development schemes.

Measures

The contribution of measures to the conservation of biodiversity can be considered in three ways:

- Measures which directly benefit biodiversity
- Measures which indirectly benefit biodiversity
- Measures which may have negative impacts on biodiversity

Measures expected to directly benefit biodiversity

The measure expected to be of most direct benefit to biodiversity is the *agri-environment measure*, allocated 68% of total public funding. Environmental Stewardship (ES) is the agri-environment measure which has three components:

⁵ <http://www.defra.gov.uk/farm/singlepay/furtherinfo/modulation.htm>

- Entry Level Stewardship (ELS) a broadly based element aimed at all conventional farmers in England.
- Organic Entry Level Stewardship (OELS) a broadly based scheme aimed at organic farming.
- Higher Level Stewardship (HLS) a more targeted scheme aimed at the most valuable habitats and environmental features that require complex and locally adapted management

The objectives of the scheme are stated as:

- wildlife conservation (both in protected areas and the wider countryside);
- the protection of the historic environment (focusing on the field monuments and vernacular buildings associated with the farmed environment);
- the maintenance of landscape quality and character;
- the promotion of public access and understanding;
- natural resource protection (focusing on the management of soil and water).

A key objective of ELS is the conservation of farmland birds, reflecting the use of farmland birds as an environmental indicator. A particular focus of HLS is the conservation and management of Natura 2000 sites, which represent habitats of conservation importance, and helping to meet Biodiversity Action Plan targets. Other objectives of the scheme e.g. reducing diffuse pollution and maintaining landscape features will also be of benefit to biodiversity.

The combined emphasis on biodiversity in the scheme objectives and high levels of funding for ES should contribute to substantive achievements in relation to biodiversity and farmland birds in particular. Targets for ES include 50,000 farm holdings or those of other land managers receiving support covering 2.5 million hectares. Since the same area of land may be covered by several different types of agreement, the physical area under agri-environment support is 7 million hectares. Defra has also established a target to reverse the decline of farmland birds by 2020 and ensure that 95% of Natura 2000 sites have a favourable conservation status. The latter target has been set because the Natura 2000 measure is not being implemented but the agri-environment measure will be used to support farmers in managing Natura 2000 sites.

Support for non-productive investments can also be expected to directly deliver biodiversity benefits by providing support for capital investments necessary to achieve the objectives of the agri-environment measure. Capital investments may support the restoration of wetlands and moorlands or the restoration and reinstatement of traditional boundary features such as hedgerows. This measure is to be allocated 5% of total expenditure and 6% of Axis 2 expenditure. Targets are those as established for the agri-environment measure.

A further measure which can be expected to directly benefit biodiversity is that of ***forest environment payments***. The measure is implemented through the English Woodland Grant Scheme (EWGS) with the objective of '*increasing the area of woodland, particularly that of High Nature Value, that is managed in a manner that will protect its public interest and enhance the environmental benefits it provides*'. Management to benefit biodiversity interest is just one of the actions that can be

supported under this scheme. This measure is allocated only 0.4% of total funding and 0.5% of Axis 2 funding. The main targets are for 100,000 ha of forest area to be supported and 95% of Natura 2000 and other SSSI sites to be in favourable conservation status by 2010.

The main measure which could have negative impacts on biodiversity is *1st afforestation of agricultural land*. However, the way in which this measure is to be applied in England is more likely to be of direct benefit to biodiversity than to have negative impacts. Two types of afforestation are to be supported under this measure: the establishment of permanent woodland on agricultural land (under the Woodland Grant Scheme); and, the establishment of perennial, woody crop (short rotation coppice (SRC)) on agricultural land as part of the national energy crops scheme.

Permanent woodland is to be targeted:

- close to centres of population where there is inadequate provision of access to existing woodland;
- to buffer, enlarge or create habitat networks which enhance high nature value woodlands (which are frequently of small individual size and fragmented);
- to buffer watercourses or to prevent soil erosion as part of an approach to catchment sensitive farming.

In addition, woodland creation will be expected to meet standards for protecting and enhancing biodiversity. As a result of such targeting and standards, benefits to biodiversity can be anticipated from this measure.

SRC can provide habitat for some birds and other species but has the potential to be environmentally damaging if planted in the wrong place e.g. on habitat of high environmental value. The way in which SRC is managed is also critical to its environmental impacts. To avoid this, the scheme will ensure that '*any first afforestation is subject to environmental checks to ensure that plantings are compatible with local conditions and do not harm biodiversity.*' Management standards must also be followed as established by the UK Forestry Standard. In addition, any new planting (broadleaf or SRC) which may have a significant effect on the environment is also subject to Environmental Impact Assessment regulations.

A total of 3% of funding is allocated to afforestation. Some 2,200 ha of permanent woodland are to be established and 8,550 ha of SRC.

In the same way that steps are to be taken to prevent environmental damage by afforestation, *modernisation of agricultural holdings* – another measure sometimes linked to negative environmental impacts – is to be targeted at achieving environmental outcomes. Activities supported will include developing renewable energy projects and improving on-farm nutrient management. The target is for 850 holdings to receive support; the measure will receive 1% of funding.

Measures expected to indirectly benefit biodiversity

Measures which might be expected to indirectly benefit biodiversity are those which do not have specific environmental objectives but which seek to support certain types

of farming or land management activity which, in turn, may benefit biodiversity. The ***Less Favoured Area (LFA)*** measure can generally be considered in this way. This measure is to be allocated 5% of public expenditure.

In England, the LFA measure is known as the Hill Farm Allowance (HFA) Scheme. There has been considerable debate in England about the future prospects of this scheme focusing on the indirect nature with which such a scheme is able to secure environmental benefit. A Defra commissioned report⁶ reviewed a number of policy scenarios for the future of the HFA scheme and concluded that greatest environmental benefit could be achieved by integrating LFA support into the agri-environment measure. As a result, Defra is now proposing to continue the scheme until 2009 but from 2008 narrow its geographic focus to the most Severely Disadvantaged Areas (SDA) which have higher biodiversity and landscape value than the Disadvantaged Areas (DA). From 2010 onwards, LFA support will be integrated into Environmental Stewardship – one of the main agri-environment measures in England. The Programme states this is to ‘*ensure that public expenditure for maintaining upland farming is targeted directly towards the provision and maintenance of wider public benefits – and in particular, environmental and landscape benefits*’. In terms of securing the conservation of biodiversity in upland areas, this is likely to be a positive development and will boost funding for measures that can deliver biodiversity benefits more directly. In 2007, 9,000 holdings (1.14 million ha) will receive support under this measure but this will drop to 6,500 (0.95 million ha) in 2009 reflecting the more targeted nature of payments to hill farmers.

Several other measures may indirectly benefit biodiversity. The first of these is ***vocational training and information activities***. Support is provided for trainees and providers of training and information. The topics covered by such training are broad but can include:

- climate change adaptation and mitigation;
- resource use, including waste reduction, waste management, water use (including diffuse water pollution), energy efficiency;
- environmental land management topics, including environmentally sensitive methods of harvesting bioenergy and avoiding disturbance to protected species.

Together these may improve farmers’ environmental knowledge and improve their land management skills. Training which helps to reduce diffuse pollution for example, would not only improve water quality but have indirect benefits for aquatic life. This measure is to receive 2% of total public funding and the aim is to provide 319,000 training days for 115,000 participants. Similarly, ***use of advisory services by farmers and foresters*** may help to improve land managers’ knowledge of environmental issues.

⁶ Cumulus Consultants Ltd (2005) Assessment of the impact of CAP Reform and other key policies on upland farms and land use implications in both Severely Disadvantaged and Disadvantaged Areas of England. Unpublished report for Defra No. CCP423.

A second measure which may indirectly benefit biodiversity is ***adding value to agricultural and forest products***. This measure aims to improve the processing and marketing of primary agricultural and forestry products by, amongst other things, improving the overall performance of the enterprise. This can include improving environmental performance and reducing waste thereby delivering broad environmental benefits which may include indirect benefits to biodiversity. Some 3% of total funding is allocated to this measure with the aim of supporting 1,400 enterprises.

A third measure which may indirectly benefit biodiversity is ***diversification into non agricultural activities***. The aim of this measure is to support farm business restructuring through the development of diversified activities that provide alternative income sources. Examples of the kind of activities that might be supported are given as follows:

- environmental technologies and services, including the traditional trades required to maintain and enhance the landscape;
- renewable energy, including storage/supply of woodfuel (planting support and forestry processing activity are eligible under other measures).

Again, these activities do not have a specific biodiversity focus but may result in spin-off benefits for habitats and species. Some 2% of total funding is allocated to this measure with the aim of supporting 1,290 beneficiaries. Since grant aid will only be provided up to 50%, total financial commitments to diversification will be significantly higher.

A fourth and final measure is ***local strategies*** under the Leader Axis, specifically that part of the funding which will help to deliver Axis 3 objectives for quality of life and diversification. Some 3% of funding is allocated to this measure with the targets being those of relevant measures within Axis 3.

Measures which may have negative impacts on biodiversity

Appropriate steps appear to have been taken to ensure that no negative impacts on biodiversity arise from any measure. Measures such as the first afforestation of agricultural land, often seen as creating a negative impact due to the impact it has on habitats, is likely to provide biodiversity benefits.

Conclusions

Cross compliance is the main Pillar 1 mechanism which places some constraints on farming practices. At this stage, it is difficult to say with any confidence whether cross compliance will result in improved compliance with environmental legislation such as the Nitrates Directive or Birds and Habitats Directives. This will require several years of compliance data to determine if there are any trends or improvements. In theory, SMRs 1-5 should effectively incentivise compliance. GAEC standards are the most comprehensive of any Member State covering a wide range of environmental issues. If high compliance levels can be achieved, these standards should help to protect the environment and benefit farmland biodiversity.

The England RDP is a good example of a programme designed to maximise environmental benefit generally and which has a strong focus on biodiversity. The allocation of 68% of the budget to the agri-environment measure is indicative of the high priority given to environmental land management in England. In addition, the decision to apply voluntary modulation will result in a very significant boost to environmental expenditure over the next seven years. Farmland bird species such as skylark, grey partridge, lapwing and corn bunting and habitats such as moorland, lowland wet grasslands and broadleaf woodland can all be expected to benefit from the RDP. Many measures will benefit species and habitats directly while others are likely to result in benefits to soil, air or water resources or contribute to climate change mitigation that will, indirectly, benefit biodiversity. Regarding measures which have, historically, been used by some Member States in environmentally damaging ways, Defra seems set to apply such measures to help improve farming's environmental performance. The use of conditions and standards to avoid environmental damage can be helpfully noted in relation to a number of measures.

At programme level at least, the RDP for England suggests considerable effort has been made to design a series of measures aimed at achieving environmental outcomes. The key challenge will be to ensure that the delivery and implementation of these measures on the ground is as promising.

3 Case Study Report: Finland

Author: Vicki Swales

Introduction⁷

Finland is located between the 60th and 70th latitudes. A quarter of Finland's area lies to the north of the Arctic Circle. The total area of Finland is 390,920 km², of which 304,112 km² (78%) is land and 86,808 km² (22%) is water (sea and inland waters). Of the land area, 86% is covered by forests and 8.9% is agricultural land (compared to a Community average of 46.7%). In 2004, UAA totalled 2.2 million hectares. Rural landscapes vary in different parts of Finland from large, open farmlands in Ostrobothnia to the small-scale and varied landscape created by fields, forests and lakes in eastern Finland.

The northern climatic conditions and peripheral location relative to the core markets of Europe place particular constraints on Finnish agriculture. These conditions constitute a permanent handicap reflected in the production structure and methods and result in high production costs and low yield levels (the reference yield in Finland is the lowest among the EU-15). In many parts of the country farming suffers from the fragmented and scattered structure of the lands, which makes it particularly difficult to increase farm size. The average size of parcels is only 2.4 ha. Finnish agriculture is mainly family farming, which means that farms are typically small. Most forest land is privately owned and the average area of a forest holding is 36.7 ha. The share of farmers among forest owners is diminishing.

In 2005, agriculture, forestry fishing and hunting contributed 2.9% of GDP. The share of jobs in agriculture and forestry is 4 % and that of the processing sector is 25%. The average age of farmers is expected to rise from 46.7 to 47.7 years by 2013. In eastern and northern Finland many farmers quit production without having a successor. Thus agricultural production and jobs are concentrating to southern and western Finland.

The Environmental Context

Traditional farming landscapes are characterised by the alternation of open and managed arable areas and forests, water bodies and other types of areas. In certain regions structural change in agriculture has led to a decrease in biological diversity and the number of endangered species living in farming environments has also grown rapidly in recent years. Most of the threatened species live in forests (37 per cent), while traditional biotopes are the second most common habitat for them (28 per cent). Since 1981 the national bird index, which is one indicator for biological diversity, for species living in arable areas, field margins and farmyards has decreased, while the bird index for forest species has risen.

The Finnish Natura 2000 network includes 1,860 sites, of which 87 are located in the Province of Åland. The surface area of the Natura network is about 4.9 million

⁷ The following information is summarised from the 2007-2013 Rural Development Plan for Finland. Irina Herzon of BirdLife Finland is thanked for her detailed comments on an earlier draft.

hectares, of which about three-quarters, 3.6 million hectares, is land. Natura areas represent 0.35% of agricultural land and 5.9% of forest land.

Agriculture and forestry are significant sources of nutrient loading of water bodies. In 2003 the status of 80% of the lakes and 73% of the sea area was excellent or good. Water quality in rivers is poorer, only 43% of them were classified as excellent or good in 2003, because settlement and farming are concentrated along the rivers. In recent years the state of the rivers flowing to the coasts and coastal waters has declined.

Greenhouse gas emissions from agriculture declined between 1990 and 2004. Agriculture accounts for 97% of ammonia emissions but emissions are declining. Finland is a significant user of bioenergy. The share of renewable energy in primary energy has been 22-25% in recent years - mostly wood and wood-based fuels - but interest is growing in crops such as reed canary grass.

Pillar 1

In Finland a dynamic hybrid model for the Single Payment Scheme (SPS) was introduced in 2006; support shifting from a historic payment to a regional flat-rate payment complemented by a farm-specific supplement. Some payments remain partially decoupled, as follows: 50% of sheep and goat premium and 75% of special male bovine premium. Finland also makes use of Article 69 applying reductions in the arable crops and bovine sectors. The funds released through the modulation of direct payments are allocated to agri-environmental support. In 2006, expenditure on direct aids in Finland was €502.4 million of which €353.9 million was spent in the arable sector and €141.3 million was spent in the livestock sector.

The main mechanism applying any controls to farmers' responses to the subsidy regime is *cross compliance*. The cross compliance standards applied in Finland are reviewed below.

SMRs

SMRs 1-5 are those which are likely to have the most significant bearing on biodiversity. According to the most recent evaluation of cross compliance⁸, implementation of these SMRs is complete and satisfactory with farmers' obligations established and appropriate control regimes in place. In 2005, breaches of cross compliance obligations were most common in relation to the SMRs covering animal identification and registration. However, a substantive number of breaches were found in relation to SMR 4 – the Nitrates Directive (24.7% of all breaches). Pollution of watercourses by nitrates could have negative impacts on biodiversity where it occurs and improving compliance with the Nitrates Directive should be a priority for the Finnish administrations.

GAEC

⁸ Alliance Environnement (2007) Evaluation of the Application of Cross Compliance as foreseen under Regulation 1782/2003. Part 1: Descriptive Report and Part 2: Replies to Evaluation Questions. Reports for DG Agriculture

Finland has established GAEC conditions for all four issues identified in Annex IV of the cross compliance legislation. The greatest number relate to soil issues with a particular emphasis on conditions to prevent soil erosion. These are:

1. There must be 60-cm, untilled verge between fields and major ditches/watercourses.
2. In the Class I and II ground water areas fallow land must have green cover.
3. In the ground water areas, new vegetation on the fallow or uncultivated fields must not be sown with more than 20 % nitrogen binding species.
4. Uncultivated fields must have a grass cover. (Game cover and landscape vegetation is permitted).
5. Grass-covered uncultivated fields and green fallow must be cut once during the growing season.
6. The timing of the cut must take account birds and mammals.
7. Open and stubble fallow must be cut annually. If not, then steps must be taken to prevent the spreading of weeds.

While the main aim of these conditions is to prevent soil erosion, several are likely to have indirect benefits for biodiversity e.g. timing of cutting and measures that help to improve water quality. The mowing requirement (no. 6) is thought to be weak according to BirdLife since it is not possible to check the timing of the mowing. Finland also has conditions in place preventing stubble burning and restrictions on machinery use in certain conditions. Regarding the issue of minimum level of maintenance, Finland has adopted a rather minimalist approach with only three farmers' obligations defined, as follows:

1. Rules for management of permanent pasture.
2. Small groups of trees and bushes as well as patches of rocks located in fields must be retained.
3. Prevent wild oats spreading.

The permanent pasture rules require farmers to cut, graze or clear vegetation to prevent encroachment. Given the dominance of forestry in Finland and the relatively small area of open farmland, avoiding encroachment is likely to be beneficial to farmland biodiversity by maintaining open field habitats. Equally, maintaining small groups of trees and bushes – which may be a habitat for some species – is likely to be beneficial. Overall, GAEC conditions likely to benefit biodiversity are rather limited and could be strengthened to afford greater protection for farmland species. For example, wider field margins could be required alongside water courses.

Permanent Pasture

The extent of permanent pasture increased in Finland from 2003 (the reference year) to 2005 according to the cross compliance evaluation and hence any obligations to protect permanent pasture can be seen as precautionary. The rules state that if the relative national share of permanent pastures in UAA decreases by more than 5 % from 2003 (base year), a prior licence is required by farmers to convert permanent pasture to other uses. Areas under special agri-environmental agreements are relaxed from the prior licence procedure (e.g. upkeep of traditional biotopes and landscapes). If the decrease of the national share is more than 10 %, a certain percentage share (decided by the Ministry of Agriculture and Forestry) of the land must be restored.

Areas under special agri-environmental agreements and pastures afforested for environmental reasons are released from this obligation. Permanent pastures that have been taken for other uses during the last two years must be reconverted and farmers must cover the costs of reconversion.

Apart from the derogations for areas under agri-environment, Finland does not distinguish permanent pasture in terms of its environmental value. In theory therefore, the rules as applied could allow the loss of some high nature value permanent pasture (up to 5%). However, since permanent pasture levels seem to be increasing this is not currently a problem.

Pillar 2

Strategic priorities and objectives

Finland's Rural Development Strategy sets out the strategic priorities and objectives for rural development funding and measures. This document states that:

'The main objectives of the strategy are to preserve a viable and active countryside, improve the state of the environment and promote the sustainable use of renewable natural resources. To achieve this, the strategy needs to respond to the permanent challenge created by the northern and remote location and adverse climate, abundance of water bodies and low population density in respect of preserving and improving the viability of the rural areas. The strategy aims to reinforce the position of the Finnish countryside to keep up with regional, national and international development as globalisation proceeds.'

The priorities for Axis 1 are improving the productivity and competitiveness of the agriculture and forestry sectors, promoting diversification and improving farmer's business skills and their awareness of the environment and animal welfare. These priorities are to be mainly funded outside the RDP and hence are not a priority for EAFRD funding.

Axis 2 is given the highest overall priority in the Finnish RDP. The priorities for Axis 2 are:

1. To maintain valuable, open, cultivated agricultural landscape as well as meadows and pastures independent of whether they are used to produce food or food raw materials or renewable energy or managed without cultivation.
2. To reduce environmental load to the soil, surface waters, groundwater and air from agricultural sources by the promotion of environmentally-friendly production methods. To support the reduction in greenhouse gases and the preservation of the organic matter in the soil and carbon sink effect through renewable bioenergy produced on agricultural and forest land.
3. To preserve biodiversity in agricultural and forest environments. Special emphasis is given to the preservation of the Natura 2000 network of agricultural and forest areas.

Biodiversity - in relation to farmland and forestry - can therefore be seen as a key priority for both funding and measures. There is no mention of specific species and habitats in the Strategy however the emphasis on the preservation of the Natura 2000

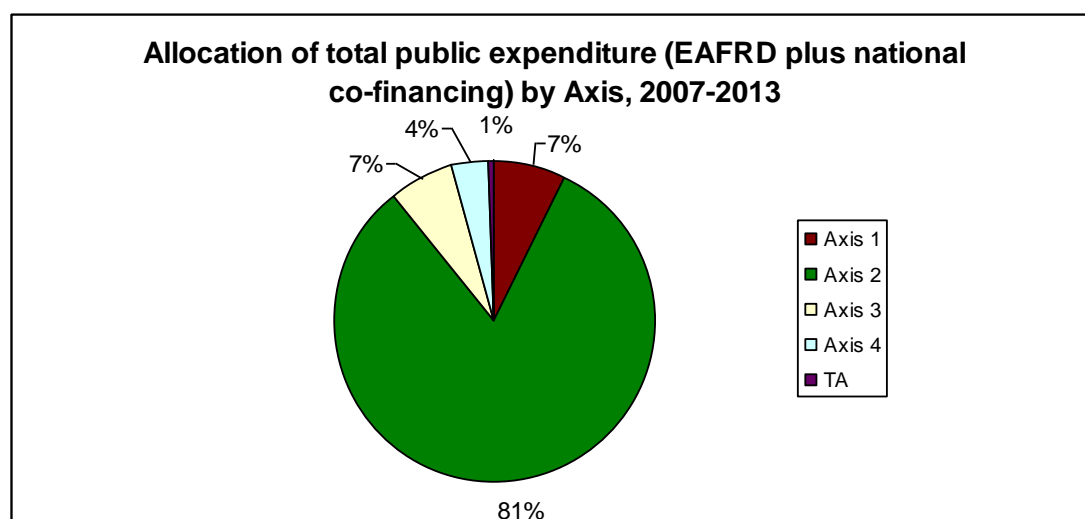
network should mean a degree of targeting at species and habitats of conservation concern. However, this will be limited as only 0.35% of farmland falls within Natura (pers. comm.).

The focus of Axis 3 is on maintaining the rural population and ensuring there are job opportunities for that population while Leader will focus on implementation of local development strategies.

Funding

Figure 2 shows the allocation of RD spend for the 2007-2013 planning period by Axis and is indicative of the priority given to the above stated objectives. It illustrates that the greatest proportion of funding, in line with stated priorities, is to be given to Axis 2 and the next largest amounts to Axes 1 and 4 with the smallest amount allocated to Leader.

Figure 2. Total Public Expenditure by Axis 2007-2013 for Finland.



The corresponding measures, funding and their percentage of RD funding as a whole are shown in the table below.

Table 3. Allocated EAFRD Expenditure by Measure for Finland 2007-2013.

Axis	Measure	EAFRD incl co-financing (Euros)	% of total public expenditure	% of Axis	Private Expenditure (€)	Additional National Financing (€)
2	Agri-environment payments	2,322,469,754	35%	43%		
2	Natural handicap payments to farmers in mountain areas	1,657,000,000	25%	31%		

2	Payments to farmers in areas with handicaps, other than mountain areas	1,302,000,000	20%	24%		
3	Diversification into non-agricultural activities	170,000,000	3%	39%	133,571,000	
1	Setting up of young farmers	160,000,000	2%	32%	160,000,000	70,000,000
4	Local strategies: quality of life/diversification	159,000,000	2%	66%	106,000,000	
3	Business creation and development	158,000,000	2%	36%	119,193,000	
1	Modernisation of agricultural holdings	115,204,000	2%	23%	115,204,000	70,000,000
1	Adding value to agricultural and forestry products	107,500,000	2%	21%	94,378,000	
2	Animal welfare payments	105,000,000	2%	2%		
1	Early retirement	56,000,000	1%	11%		
4	Local action group	40,000,000	1%	17%	8,193,000	
1	Vocational training and information actions	38,500,000	1%	8%	6,794,000	
3	Basic services for the economy and rural population	38,000,000	1%	9%	4,222,000	
1	Cooperation for development of new products, processes and technologies	27,000,000	0.4%	5%	12,130,000	
3	Encouragement of tourism activities	26,000,000	0.4%	6%	2,889,000	
4	Cooperation projects	24,000,000	0.4%	10%	6,000,000	
3	Village renewal and development	20,000,000	0.3%	5%	2,222,000	
3	Training and information	15,000,000	0.2%	3%	2,647,000	
2	Non-productive investments (agriculture)	10,000,000	0.2%	0.2%		
2	First afforestation of agricultural land	10,000,000	0.2%	0.2%		
4	Local strategies: competitiveness	10,000,000	0.2%	4%	8,182,000	
4	Local strategies: environment/land management	9,000,000	0.1%	4%		
3	Conservation and upgrading of the natural heritage	6,000,000	0.1%	1%	667,000	

Source: IEEP-developed database of RD expenditure.

Three measures stand out, all within Axis 2, together securing 80% of the total public expenditure on rural development in Finland: agri-environment (35%); natural handicap payments in mountain areas (25%) and payments to farmers in areas with handicaps other than mountain areas (20%) – as shown in the table below. A number of other measures receive relatively minor funding allocations of 2-3% e.g. diversification into non agricultural activities (3%). The contribution of these measures, and other relevant measures, to the conservation of biodiversity is considered next.

Table 4. Measures in the RDP for Finland receiving the highest levels of funding.

Measure	EAFRD including co-financing €	% of total public funding
Axis 1		
Setting up of young farmers (112)	160,000,000	2
Modernisation of holdings (121)	115,204,000	2
Axis 2		
Agri-environment (214)	2,322,469,754	35
Natural handicap payments in mountain areas (211)	1,657,000,000	25
Payments to farmers in areas with handicaps (212)	1,302,000,000	20
Axis 3		
Diversification into non-ag activities (311)	170,000,000	3
Business creation and development (312)	158,000,000	2
Axis 4		
Local development strategies (411/12/13)	159,000,000	2

Measures

The contribution of measures to the conservation of biodiversity can be considered in three ways:

- Measures which directly benefit biodiversity
- Measures which indirectly benefit biodiversity
- Measures which may have negative impacts on biodiversity

Measures expected to directly benefit biodiversity

The measure expected to be of most direct benefit to biodiversity is the *agri-environment measure*, allocated 35% of total public funding. The agri-environment measures include basic measures, additional measures and special measure contracts as sub-measures. The objective is to grant agri-environment payments to 93% of the farmers (98% of arable land). The total area receiving agri-environment payments is likely to be maintained at 2.26 million hectares over the plan period while the number of farms and other land users supported will decline from the current 64,148 over the plan period (the exact number is not stated). The Finnish agri-environment measure has been criticised by stakeholders in the past as providing little more than a top-up

payment to farmers and failing to deliver against either biodiversity or resource protection indicators (pers. comm.).

The basic and additional measures appear to be more heavily focused on resource protection issues such as preventing water pollution and soil erosion than biodiversity and landscapes. Under the basic measures, farm planning and recording are the main actions funded. Meanwhile, farmers can receive payments for, for example, 'reduced fertilisation' and 'plant cover in winter and reduced tillage' under the additional measures. Some of these measures are likely to have indirect benefits for biodiversity e.g. through improving the quality of the aquatic environment. The main measures likely to benefit biodiversity and landscapes are found in the special measures. These include payments for:

- Management of multifunctional wetlands.
- Organic production.
- Management of traditional biotopes.
- Enhancing biodiversity and landscape diversity.

However, even within the special measures, there is still a rather strong emphasis on water issues and reducing nutrient loading with payments for 'runoff water treatment methods', 'establishment and management of riparian zones' and 'arable farming in groundwater areas'. The measure for enhancing biological and landscape diversity is the most directly relevant to key habitats and species but only 2,500 farms per year and 10,000 ha (0.45% of UAA) are to be targeted by this measure and it will receive only 1.4% of the agri-environment scheme budget per annum. Farmers must establish and/or manage areas or objects that are important to the preservation and reproduction of plant and animal species and to the agricultural landscape. Particular emphasis is given to Natura 2000 sites within this, although as mentioned above only a very small proportion fall on agricultural land.

Overall, while the agri-environment measure receives the second largest share of rural development funding, a rather low proportion of this is directly allocated to biodiversity measures and a much greater emphasis given to resource protection issues. There may be a case for arguing that some of this resource protection should be achieved through regulatory approaches such as cross compliance.

No other measures funded by the Finnish RDP are likely to have direct benefits for biodiversity.

Measures expected to indirectly benefit biodiversity

Measures which might be expected to indirectly benefit biodiversity are those which do not have specific environmental objectives but which seek to support certain types of farming or land management activity which, in turn, may benefit biodiversity. The *Less Favoured Area (LFA)* measures can generally be considered in this way. These measures are to be allocated 45% of public expenditure (split between mountain (25%) and non-mountain (20%) areas). In practice, Finland operates the two measures together and has defined three LFA regions for payments which accord with the regional allocation of support for arable crops. The three regions are denoted as: support area A: support areas B-C1: and, support areas C2-C4. These regions receive support of €150, €200 and €210 respectively. The higher payments are made in the

northern, and more agriculturally handicapped, parts of Finland. Payments will be granted on 2.16 million ha/year and to fewer than the current 65,921 farms over the plan period (the exact number is not stated).

In Finland, the LFA measure is presented almost entirely as a socio-economic measure designed to help support the continuation of farming in very marginal farming areas. There are no real environmental conditions applying to payments, beyond cross compliance requirements, and any environmental value of the measure is the indirect result of the maintenance of farming and open landscapes in a country that would otherwise be entirely forested. However, given the scarcity value of the farmed landscape in Finland, and its importance to a number of species, the indirect benefits afforded by this measure may be significant.

A second measure which may indirectly benefit biodiversity is ***diversification into non agricultural activities***. The objective of this measure is ‘*to increase employment opportunities in rural areas and to help farmer families earn their living by encouraging them to diversify into other business activities than agriculture, so that the income generated can be used to offset the losses of income arising from the decline in agricultural income*’.

Examples of the kind of activities that might be supported include ‘*investments in and development of enterprises that engage in the processing of metal, plastics or in the second-stage foodstuffs and handicraft enterprises, the production of bioenergy, environmental management and forestry services*’.

Again, these activities do not have a specific biodiversity focus but may result in spin-off benefits for habitats and species e.g. if environmental management is promoted. Some 3% of total funding is allocated to this measure with the aim of supporting 5,000 beneficiaries. Since grant aid can only cover a proportion of costs, total financial commitments to diversification will be greater than the €170 million allocated to this measure from the public purse.

A fourth and final measure is ***local strategies*** under the Leader Axis which will be used to support implementation of measures across Axes 1-4. Some 2% of funding is allocated to this measure. Some 50-58 Local Action Groups will operate and 7,000 applications are expected to be approved across all Axis 4 measures.

Measures which may have negative impacts on biodiversity

A measure which could, potentially, have negative environmental impacts is that of ‘***modernisation of holdings***’. This measure will receive 2% of total public funding and it is anticipated that 1,100 applications will be approved. The RDP states that the actions that will be funded under this measure are:

- building investments in milk production and cattle farming, including the machinery and equipment closely related with building (investments in new buildings, overhauls and extensions), as well as investments in feed storages and manure storages;
- investments in the production of bioenergy based on the energy raw materials of agricultural holdings; a precondition is that the energy produced is mainly used on the holding(s); and

- planning costs and preliminary studies on the feasibility of investments as well as energy surveys, if any.

Investment in milk production and cattle farming may indirectly support the intensification of production which could have negative environmental impacts. However, improvements in manure storage could be positive from an environmental perspective. Supporting farm based bioenergy systems could also have positive impacts depending on the nature of the systems and the materials used to produce bioenergy. Overall, any negative impacts of this measure on biodiversity should be relatively low, although adequate assessment of the impact of removing forest biomass is needed to ensure no negative impacts on soil fertility or biodiversity.

The measure *business creation and development* receiving 2% of funding could lead to negative environmental impacts depending on the type of businesses created. No environmental conditions appear to be applied to funding applications and environmental businesses are not specifically promoted. Both of these additions to the RDP would be beneficial.

Conclusions

Cross compliance is the main Pillar 1 mechanism which places some constraints on farming practices. At this stage, it is difficult to say with any confidence whether cross compliance will result in improved compliance with environmental legislation such as the Nitrates Directive or Birds and Habitats Directives. This will require several years of compliance data to determine if there are any trends or improvements. GAEC conditions in Finland could be strengthened to give greater focus to the protection of biodiversity and landscape in the farmed environment. Conditions relating to ‘minimum level of maintenance’ appear to be particularly limited.

On the surface, Pillar 2 expenditure appears to be heavily focused on Axis 2 – the environmental Axis. While a substantive proportion of funding is targeted at the agri-environment measure, closer analysis of actions to be funded reveals greater emphasis on the protection of water and soils than on biodiversity. In reality, a relatively small proportion of overall funding appears to be targeted directly at the protection and management of species and habitats including a small proportion of the Natura 2000 network. The largest share of funding, both for the programme as a whole and within Axis 2, goes to the LFA measure. This reflects the severe conditions and handicaps faced by Finnish agriculture and the desire by the authorities to maintain farming activity - for socio-economic reasons - in a very marginal situation. The maintenance of such farming may have indirect benefits for biodiversity by maintaining an open farming landscape in an otherwise heavily forested country. Environmental benefits could, arguably, be strengthened by the inclusion of some environmental conditions attached to payments, beyond the scope of cross compliance which is already limited.

4 Case Study Report: Hungary

Author: Vicki Swales

Introduction⁹

Hungary occupies an area of 93,030 km² (9.3 million hectares) of which 89% is suitable for agriculture and forestry. Its climate, soils and topography create favourable conditions for agriculture with plains occupying more than half of the country's area. In 2006, only 62.5% of Hungary's total area was under agricultural cultivation of which: 48.5% was arable land, 10.9% grasses, and 3.1% orchards and vineyards. The Southern and Northern Great Plains have the highest proportion of agricultural land (22-23%) while Central Hungary has only 7%. Following the economic and social reforms in Hungary, private ownership of land now accounts for 82% of the area with the average plot size being only 2.3 ha and the average farm size for individual farms being 3.4 ha. Some larger, co-operative farms remain. Between 2000 and 2005, the average size of economic organisations (farms with more than one shareholder) fell by 35% to 486 ha. Large farms between 100-300 hectares and farms above 300 hectares together use 72.2% of all areas, while they constitute only one percent of all farms. The role of agriculture in the national economy is significant but decreasing, accounting for 3.7% of GDP in 2005.

Some 21.4 % of the country's area is utilised by forestry management and, of that, 19.1% was actually forested in 2005. Distribution is uneven with 11-12% in the Great Plain and 26-28% (2005) in the regions with mountains and hills (West-Transdanubia, Northern Hungary). Of the total area, 58% is owned by the state, while 41% of forests are in private ownership and 1% is owned by communities (municipalities, associations, foundations, churches). The total forest area in private ownership is 787,000 hectares, of which individual and associated farmers manage 555,000 hectares (70.5%). The number of private forest owners is close to 250,000 in the operational part of the forestry area, which shows the fragmentation of property. The average area of the operating private forest holdings is approximately 2.2 ha. The forest area has grown by 100,000 ha since 1995 with most afforestation taking place in privately owned areas.

In 2004-2006, 88% of Hungary was classified as rural including 96% of settlements, home to 47% of its c.10 million inhabitants. Rural areas are characterised by low population density (with an ageing population), heavy reliance on land as source of livelihood, and a settlement structure typified by villages, small towns, and, in certain regions, by isolated farms. Infrastructure for agriculture and forestry management (roads, service facilities, water management systems etc) is incomplete or outdated.

The Environmental Context

Hungary has a wealth of environmental and natural assets and is rich in biodiversity and valued landscapes. Agriculture's potentially negative impacts on the environment are recognised in the RDP but declining concentration and intensity of production are considered to have reduced some environmental problems. Excessive fragmentation

⁹ The following information is summarised from the 2007-2013 Rural Development Plan for Hungary.

of production and a lack of professional know-how are seen as more problematic. The RDP identifies the main environmental issues as wind and water erosion, the loss of biodiversity and soil compaction. The RDP summarises and prioritises the main environmental issues as follows:

Main problems arising from the lack of agri-environmental management

Problem	Size of the affected area	Environmental significance	Total
Wind and water erosion	+++	+++	6+
Loss of biodiversity due to abandonment of cultivation in areas of high natural assets	++	+++	5+
Soil compaction	+++	++	5+
Devastation of natural values due to intensive farming	+	+++	4+
Landscape damage due to the abandonment of land	++	++	4+
Water contamination due to nitrate and phosphate seepage from farming	+	++	3+

Hazard level: + moderate; ++intense; +++very intense

Source: Ministry of Agriculture and Rural Development: National Plan of Rural Development in response to the Measures of the Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGGF) – Budapest, July 19, 2004.

Forestry is seen as increasingly important in relation to water management, preventing soil erosion and combating the harmful consequences of climate change. The size of nature conservation areas is considerable, and additional areas have already been designated as parts of the Natura 2000 network.

Pillar 1

Following accession, direct subsidies from the CAP were phased in, to reach the level of EU 15 Member States subsidies by 2013. Hungary opted to top-up EU funding from national sources which will result in parity with the EU 15 by 2010. Hungary adopted the Single Area Payment Scheme (SAPS) and has established a separate process for national top-ups. Hungary paid 318 billion HUF in direct EU subsidies in the period between 2004-2006, of which 252 billion HUF was SAPS and 66 billion HUF were market (intervention) subsidies. The total amount of subsidies (EU direct payment, top-up and other national subsidies) came to 756 billion HUF. The income of the farms (pre-tax profits) in the same period came to approximately 370 billion HUF. Thus the proportion of direct EU subsidies (SAPS and market) compared to all subsidies is 42%, and reached 86% percent of the income of the farms. Approximately 210,000 farms received direct CAP subsidies.

The larger, better organised farms have fared better under the CAP regime than smallholders and part-time farmers as have arable farmers compared to livestock producers (especially pigs and poultry). Larger farms have modernised and restructured. Given the structure of the industry, a large amount of excess cereals have been produced which have required intervention buying. The agriculture sector as a whole has faced increased competition both domestically (within the EU) and from non-EU countries. Hungary's balance of payments has decreased from €1.5-1.6

billion to €1 billion over the period and the country has become a net importer of pig meat, dairy products and fruit. The RDP also notes greater interest and awareness among farmers of environmentally sensitive farming.

The main mechanism applying any controls to farmers' responses to the subsidy regime is **cross compliance**. By applying SAPS, Hungary is only required – at this stage - to implement the Good Agricultural and Environmental Condition (GAEC) and permanent pasture requirements and not Statutory Management Requirements (SMRs). The latter only become applicable when Hungary adopts the Single Payment Scheme (SPS) in 2010¹⁰. According to national sources, Hungary already has national legislation in place that correspond to the SMRs but this legislation is not monitored, controlled or sanctioned, and farmers are often not aware of it.

GAEC

In MARD (Main Department for Agricultural Rural Development and Environmental Management) Regulation No. 4/2004, containing 16 standards for GAEC were laid down in Hungary. However, it was immediately recognised that there were no means to monitor or control these, and the regulation was subsequently reduced to three simple measures (MARD Regulation No. 16/2005). These measures are those which can be controlled with remote sensing but their limited nature raises questions as to whether Hungary has fulfilled EU requirements for GAEC.

In relation to GAEC issue *soil erosion*, the following standard was introduced:

- Cultivation of row crops (namely potatoes) is not allowed on agricultural parcels with slope higher than 12%.

Other standards introduced initially but then dropped were:

- Ensure a minimum soil cover before spring sown crops in areas prone to erosion;
- Preserve uncultivated green spaces (plot edges, hedges, etc.) that act as natural soil protection features;
- Contour tillage in areas susceptible to erosion;
- Preservation of terraces.

No standards were introduced in relation to soil organic matter or soil structure. In relation to GAEC issue *minimum level of maintenance*, the following standards were introduced:

- Keeping arable land in good agricultural condition, avoid weed infestation;
- Avoid the existence or encroachment of weed and scrubs on areas with agricultural land use.

Other standards introduced initially but then dropped were:

¹⁰ The Health Check proposals (published 20/11/07) suggest that SAPS could be extended to 2013.

- Grazing must be adapted to the natural production capacity of the grassland;
- Preservation of natural grasslands must be ensured;
- Preserve the natural landscape elements;
- Utilisation of grassland types accordingly with mowing or grazing; at least one clearing mowing must be carried out every year.

These standards indicate a relatively unambitious approach to GAEC in Hungary with few standards introduced that will be of direct benefit to biodiversity. Preventing the encroachment of weed and scrub on agricultural land is likely to have the most direct benefits given the threat of reduced cultivations and land abandonment to biodiversity. Preventing soil erosion on steep slopes may indirectly benefit biodiversity where soil run-off into water courses is reduced. The inclusion of standards such as '*Preserve uncultivated green spaces (plot edges, hedges, etc.) that act as natural soil protection features*' and '*Preserve the natural landscape elements*' would have potentially been of benefit to biodiversity even though introduced for different purposes. In both cases, potentially important habitats could have been preserved by attaching such conditions to receipt of SAPS.

Permanent Pasture

The threshold for permanent pasture in Hungary (based on 1973/2004/EC Regulation 3/b.) is based on SAPS claims in 2005 (areas declared as permanent pasture by beneficiaries in relation to the total agricultural area). In 2005, 134,446 ha were declared as permanent pasture, which represented 2.64% of all agricultural land. In 2006, the amount of permanent pasture (129,230 ha), as well as its proportion in relation to the agricultural land area as a whole (2.53%), had declined. This rate of decline was within the yearly 10% reduction allowed by the EU and no action had to be taken by ARDA (the national paying agency). When a decline at national level does occur, ARDA will notify all applicants who requested changing the area of permanent pastures on their holdings to re-sow the relevant parcels.

The rate of decline (1.1% or 5,216 ha) in permanent pasture in Hungary is low to date. Without any further information on the nature of the permanent pasture lost, it is difficult to comment on the likely impact of this on biodiversity. However, given the limited amount of pasture in Hungary, its fragmented nature and its importance for certain species, any loss could be detrimental to biodiversity. One conclusion of the recent evaluation of cross compliance for DG Agriculture is that current permanent pasture rules are not sufficiently specified to prevent loss of environmentally important pasture, and are only able to maintain the overall ratio at national level. A few Member States have included additional GAEC requirements to deal with this issue. The inclusion of the GAEC standard '*Preservation of natural grasslands must be ensured*' (introduced and then dropped in Hungary) could have helped to protect environmentally important pasture, if specified to include grasslands of conservation value.

Pillar 2

Strategic priorities and objectives

The RDP applies to the entire territory of the country which consists of 7 administrative regions at NUTS 2 level.

The overall objectives adopted by the National Strategy Plan are:

- Contributing to the competitiveness of agriculture, food production and forestry (Axis 1)
- Sustainable development and the protection of natural values and biodiversity (Axis 2)
- Strengthen entrepreneurship and provide access to services throughout rural areas (Axis 3)

The Leader approach is to be used to realise the objectives of all axes of the RDP. Axis 2 contains measures most likely to directly benefit biodiversity in Hungary. The general objective of Axis 2 is to improve the environment and the countryside by supporting landscape management.

The overarching national priorities for Axis 2 in line with the Community Strategic Guidelines and the general objective are the following:

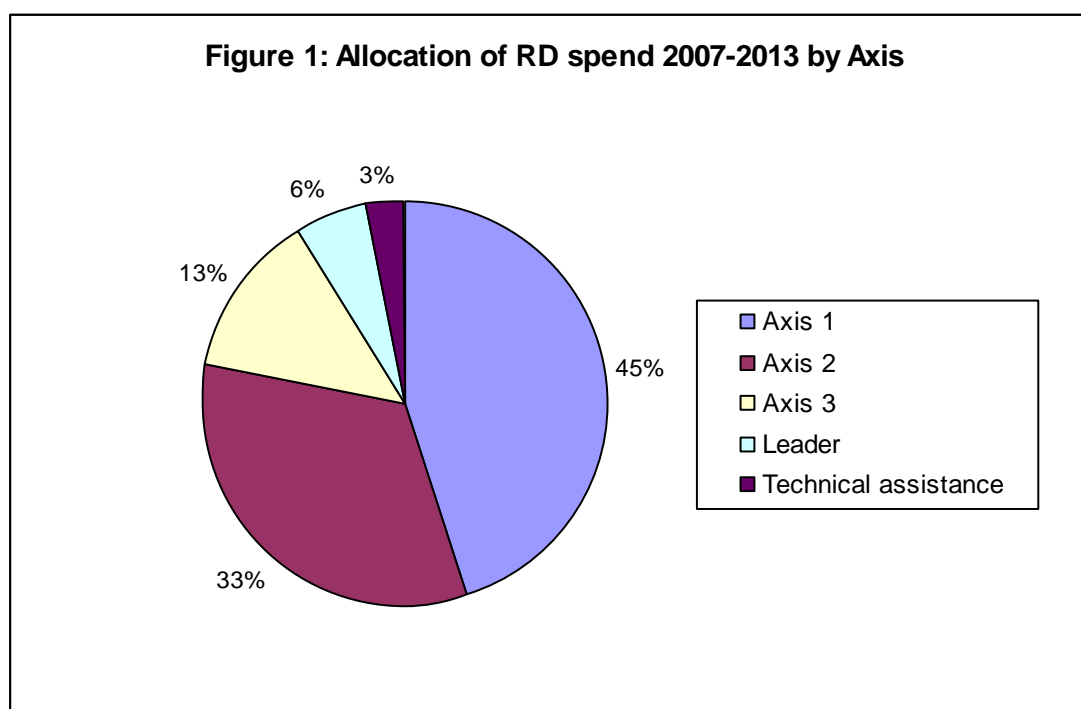
- Conservation of Natura 2000 agricultural areas and other High Nature Value Areas;
- LFA;
- Water management in quantity and quality;
- The increase and sustainable management of forest resources;
- Use of biomass for energetic purposes;
- Protection of soils.

The reference to 'biodiversity' in the NSP and the recognition of the need for 'conservation of Natura 2000 agricultural areas and other HNV areas' in the RDP both suggest that the conservation of biodiversity is given some strategic priority in Hungary. However, biodiversity does not appear to be given any greater weight than other objectives.

Funding

Figure 3 shows the allocation of RD spend for the 2007-2013 planning period by Axis and is indicative of the priority given to the above stated objectives. It illustrates that the greatest proportion of funding, and hence the highest priority, is to be given to Axis 1 and the next largest amount to Axis 2 with the smallest amounts allocated to Axis 3 and Leader. Over the planning period, Axis 1 will receive €739,672,148 (12%) more funding than Axis 2. Comparing the spend on Axis 2 relative to spend on Axis 1 in other Member States, Hungary is one of the poorer performing Member States with an Axis 2:Axis 1 ratio of 0.69.

Figure 3. Total Public Expenditure by Axis 2007-2013 for Hungary.



Source: IEEP own calculations.

The corresponding measures, funding and their percentage of RD funding as a whole are shown in the table below.

Table 5. Allocated EAFRD Expenditure by Measure for Hungary 2007-2013.

Axis	Measure	EAFRD incl co-financing (Euros)	% of total public expenditure	% of Axis	Private Expenditure (€)	Additional National Financing (€)
1	Modernisation of agricultural holdings	1,511,879,079	29%	64%	1,847,852,209	
2	Agri-environment payments	1,044,019,991	20%	64%		
3	Business creation and development	313,297,348	6%	45%	382,918,981	
2	First afforestation of agricultural land	257,019,568	5%	16%	110,151,243	
1	Infrastructure related to development and adaptation	215,103,785	4%	9%	115,825,115	
1	Adding value to agricultural and forestry products	196,882,672	4%	8%	365,639,249	
4	Local strategies: quality of life/diversification	132,773,388	3%	49%	14,752,599	

3	Basic services for the economy and rural population	110,165,183	2%	16%	12,240,576	
1	Vocational training and information actions	103,410,730	2%	4%	5,442,670	
2	Forest environment payments	89,306,167	2%	5%		
3	Village renewal and development	73,489,501	1%	11%	12,968,736	
1	Producer groups	72,884,452	1%	3%		
3	Encouragement of tourism activities	61,195,206	1%	9%	15,298,801	
4	Local strategies: competitiveness	51,066,688	1%	19%	5,674,076	
2	Natura 2000 payments and WFD payments	49,939,878	1%	3%		
2	Animal welfare payments	49,939,878	1%	3%		
1	Meeting standards	47,564,203	1%	2%		
2	Non-productive investments (forests)	45,059,760	1%	3%		
3	Skills acquisition, animation and implementation of development strategies	43,375,382	1%	6%		
2	Natura 2000 payments (forests)	43,107,712	1%	3%		
4	Local action group	40,853,350	1%	15%		
1	Cooperation for development of new products, processes and technologies	36,442,225	1%	2%	12,147,408	
1	Information and promotion	36,442,225	1%	2%		
1	Use of advisory services	35,968,950	1%	2%	8,992,237	
3	Conservation and upgrading of the natural heritage	35,294,299	1%	5%	15,126,129	
1	Setting up of young farmers	32,892,658	1%	1%		
3	Diversification into non-agricultural activities	28,111,116	1%	4%	18,740,744	
4	Cooperation projects	27,235,567	1%	10%		

3	Training and information	25,762,767	0.5%	4%	2,862,530	
1	Early retirement	25,556,885	0.5%	1%		
2	Payments to farmers in areas with handicaps, other than mountain areas	23,587,240	0.5%	1%		
4	Local strategies: environment/land management	20,426,675	0.4%	7%	2,269,631	
1	Participation in food quality schemes	20,114,216	0.4%	1%		
1	Semi-subsistence farming	18,221,113	0.4%	1%	15,618,097	
1	Improvement of the economic value of forests	12,305,168	0.2%	1%	15,039,649	
2	Non-productive investments (agriculture)	11,224,272	0.2%	1%		
2	Restoring forestry potential	10,736,260	0.2%	1%		
2	First afforestation of non-agricultural land	1,952,047	0.0%	0.1%	836,592	
2	First establishment of agroforestry systems	813,353	0.0%	0.0%	348,580	
1	Setting up of management, relief and advisory services	709,913	0.0%	0.0%	177,478	

Source: IEEP database of rural development expenditure 2007-2013.

Two measures stand out, together securing more than half of the total public expenditure on rural development in Hungary: modernisation of holdings (30%) and agri-environment (22%) – see the table below. Other notable measures are: 1st afforestation of agricultural land (5%) and supporting the establishment and development of micro-enterprises (6%). The contribution of these measures, and other relevant measures, to the conservation of biodiversity is considered next.

Table 6. Measures in the RDP for Hungary receiving the highest levels of funding.

Measure	EAFRD including co-financing €	% of total public funding
Axis 1		
Modernisation of holdings (121)	1,511,879,079	29
Increasing value of ag/forest products	196,882,672	4

(123)		
Improving and developing infrastructure (125)	215,103,785	4
Axis 2		
Agri-environment (214)	1,044,019,991	20
1 st afforestation of ag land (221)	257,019,568	5
Forest environment payments (225)	89,306,167	2
Axis 3		
Micro-enterprises (312)	313,297,348	6
Basic services for economy and population (321)	110,165,183	2
Axis 4		
Local development strategies (411/12/13)	132,773,388	3

Measures

The contribution of measures to the conservation of biodiversity can be considered in three ways:

- Measures which directly benefit biodiversity
- Measures which indirectly benefit biodiversity
- Measures which may have negative impacts on biodiversity

Measures expected to directly benefit biodiversity

The measure expected to be of most direct benefit to biodiversity is the *agri-environment measure* allocated 20% of total public funding. Under this measure, 22 different schemes have been defined (9 for arable plant production, 6 for grassland management and planting, 3 for the environmentally friendly management of plantations and 4 for the management of wetlands). Some schemes are horizontal while others are zonal, targeting specific areas and conservation priorities. Priority actions include soil protection, protection of surface and ground waters, nature conservation, genetic conservation and reducing air pollution. Instruments for the preservation and enhancement of biodiversity are mainly focused on the protection and development of Natura 2000 areas. The plan indicates specific actions for bird species of conservation concern such as Red Footed Falcon, Great Bustard, Stone Curlew, wild goose/crane and, game birds. The conservation of important bird species appears to a priority within the various actions although there is no mention of other species of conservation concern such as lesser grey shrike, aquatic warbler, imperial eagle and saker falcon. Organic farming, the management of traditional orchards and management of wetlands are also funded and likely to be of benefit to biodiversity. However, rural development funding is also targeted at other issues such as soil erosion which is likely to be of less direct benefit to biodiversity although may contribute to improved water quality and meet other environmental priorities.

Not surprisingly, given the dominance of arable land in Hungary, 50% of funding is allocated to these areas, 29% to grassland management schemes, 19% to permanent crop schemes and only 2% to wetland management schemes. Expenditure by area amounts to €35 per ha of UAA per year; much lower than in some Member States but significantly higher than in others. The target for the number of farms and land users

receiving support is 25,000 of which 10,000 (40%) will be in Natura 2000 areas. The target for the area of land under agri-environment management for the plan period is 2.8 million hectare of which 1.1 million (61%) will be Natura 2000, suggesting a high degree of priority given to Natura 2000 objectives.

Earlier agri-environment programmes experienced some problems¹¹ with delays in payments, difficulties identifying Natura 2000 site boundaries and poor agri-environment training for farmers. Unless these problems are addressed for the 2007-2013 programming period the effectiveness of agri-environment schemes for biodiversity may be compromised. Of further concern is the decision by the Hungarian authorities to delay the start of new agri-environment payments until 2008 and 2009 (depending on scheme) rather than starting them in 2007 along with payments for other measures. This could result, for example, in farmers making a decision to enter a contract for biomass production in 2007 when an agri-environment contract would have been more a more beneficial option both to the farmer and the environment.

Forest environment payments are to be allocated only 2% of the total public funding for rural development and hence are not a high priority in the plan overall. They may however be of direct benefit to biodiversity. Hungary plans to introduce 8 programmes for forest and environmental protection. There is some emphasis on the ecological management of forests and woodlands and the promotion of native trees such as pedunculate oak (*Quercus robur*) on the Great Plain. The plan targets 45,000 forest parcels amounting to 170,000 ha of land.

The **Natura 2000 payments** measure will only receive 1% of total public funding but will make an important contribution to the conservation of biodiversity. The aim of the measure is to 'preserve and sustain...the favourable conservation situation of the indicative species and selected habitats listed in the respective EU legislation'. The RDP makes it clear that only certain activities can be paid for and, in many cases – especially in arable areas – agri-environment measures will be the preferred option for securing appropriate land management. The plan targets 10,000 parcels of land amounting to 250,000 ha of land.

Measures expected to indirectly benefit biodiversity

Measures which might be expected to indirectly benefit biodiversity are those which do not have specific environmental objectives but which seek to support certain types of farming or land management activity which, in turn, may benefit biodiversity. The **Less Favoured Area (LFA)** measure can generally be considered in this way. Only 0.5% of total public funding is allocated to 'payments to agricultural producers in less favoured areas, other than mountain areas'. According to the RDP, the main purposes of the measure are 'development of a production pattern in accordance with the specificities of the production area, promoting extensive cultures (grassland and forage crops) on environmentally sensitive areas, enhancing the environment-conscious farming and sustainable landscape use.' Only 883,558 ha (9.5% of total

¹¹ Keenleyside C., et al (2006) *Farmland birds and agri-environment schemes in the New Member States* A report for the Royal Society for the Protection of Birds. RSPB, Sandy, UK.

UAA) are designated as LFA under Articles 19 and 20. In return for payments, farmers must continue farming for 5 years, comply with cross compliance requirements and keep farm records. Beyond cross compliance, there are no further specific environmental requirements. Where the measure contributes to the continuation of extensive farming systems, it is likely to have an indirect, beneficial impact on biodiversity but is rather weakly linked to the requirements of specific habitats and species. The target number of beneficiaries is 3,800 covering 170,000 ha of land.

Measures which may have negative impacts on biodiversity

Two measures are considered to have the greatest potential to impact negatively on biodiversity: modernisation of agricultural holdings and afforestation of agricultural land.

Modernisation of agricultural holdings will receive the largest share (29%) of total public funding for rural development in Hungary. The measure will be focused on three sub-measures:

1. the further modernisation of the agriculture sector, closing the technological gap
2. diversification of agricultural production, promoting the dissemination of the production of renewable energy (e.g. short rotation coppice).
3. meeting the standards/requirements set by the EU, in particular requirements linked to the Nitrate Directive in the field of livestock sector.

The first two sub-measures have the potential to fund investments that may be harmful to biodiversity. For example, short rotation coppice, if planted on environmentally important habitat, could have negative impacts although the plan states that licenses for planting will not be granted in Natura 2000 areas. The plan also suggests that some investments may be environmentally beneficial e.g. introducing machinery that has a better environmental performance. But other measures e.g. investments in irrigation may be environmentally damaging. The third sub-measure has more of an environmental focus and may be indirectly beneficial for biodiversity by reducing nutrient leaching. In the plan's favour, is the fact that almost 64% of the total budget for this measure is to be spent on animal husbandry with an emphasis on improving manure storage and management. Without further evidence at this stage, it is difficult to make any further judgements as to the overall environmental impacts of the measure, only to highlight that some sub-measures have the potential to have negative impacts on biodiversity. However, some provisions do appear to be included to try to limit any negative impacts. The plan targets 57,350 agricultural holdings, 35,000 of which will receive funding for the purchase of IT equipment, 8,100 for renewable energy, 6,200 for animal husbandry, 4,200 for arable farming; 3,400 for horticulture and 450 for on-farm diversification.

First afforestation of agricultural land will receive 5% of total public funding. The plan states the objective of the measure as 'to increase the forest cover of the country, to increase the environmental protection, social, public welfare and economic role of forests and to improve the level of employment in rural areas by developing the forestry sector, to enable the agricultural restructuring, by the help of alternative use of areas'. The plan also recognises 'the role of forestry in combating soil erosion and

contributing to climate change mitigation'. It is stated that no afforestation can be implemented where it will have a negative effect on the environment. Provisions have been put in place for the selection of afforestation areas which precludes planting on protected natural areas or Natura 2000 areas. Afforestation plans must include habitat details of the area concerned. In this way, it appears that Hungary will not allow environmentally damaging afforestation. Hence, while this measure has the potential to have negative impacts on biodiversity, steps appear to have been taken to prevent this from arising. The extent to which the various environmental provisions are applied on the ground will determine the ultimate impacts of this measure.

Conclusions

The extent to which CAP funding in Hungary is likely to help to protect or enhance biodiversity offers something of a mixed picture. In relation to Pillar 1 expenditure, relatively weak environmental controls are applied to payments due to the limited nature of cross compliance. Strengthening GAEC requirements is necessary to improve the protection of biodiversity against potentially damaging agricultural activities. GAEC standards should be reviewed with a view to introducing many of the original proposals which were subsequently not applied.

Greater emphasis could be given in Pillar 2 to the protection and enhancement of biodiversity. The strategic priorities and objectives make appropriate reference to biodiversity, and Natura 2000 objectives in particular, but the conservation of biodiversity emerges as only an average priority. The allocation of funding, and particularly the ratio of Axis 2 to Axis 1 funding is poor from this perspective. In relation to the measures themselves, the targeting of biodiversity is average. For example, while the agri-environment measure secures 20% of total public funding, only a proportion of this is directly targeted at the conservation of biodiversity with other issues such as soil erosion also attracting funding (although these may have indirect benefits for biodiversity). Expenditure per ha of UAA is about average across the Member States for which RDPs have currently been approved. The inclusion of provisions to prevent measures such as the modernisation of agricultural holdings and afforestation of agricultural land damaging the environment is good although there is potential for both these measures to fund environmentally damaging activities.

It is also worth noting that Hungary plans to use 40 of the 42 rural development measures available, which is somewhat unusual when compared with other programmes. Depending on the strength of the administration in Hungary, this might impact on the delivery of the environmental measures or possibly signify that the available funds are being spread too thinly.

5 Case Study Report: Navarra, Spain

Author: Sina Ribak

Introduction

The Autonomous Community of Navarra is a region in the north of Spain, situated at the extreme western end of the Pyrenees. Navarra's territory of 10,391 km² can be divided into three zones, from north to south: mountain, central and the Ribera. The mountain zone is characterised by forest, pastures, stockbreeding and crops such as maize and beetroot. The intermediate central zone is dominated by cereals, fodder crops and industrial crops as well as fruit plantations. The open plains of the Ribera are known for wine growing and orchards (Gobierno de Navarra 2007a and 2007b). Almost half of Navarra's territory (47%) is used as agricultural area and about one third is covered by forest (33%). Rural areas cover 90 % of the territory¹².

The Environmental Context

The importance of Navarra's natural and semi-natural areas is reflected in the Natura 2000 network which covers 24% of the territory: this includes 19.6 % of the agricultural surface and 34% of the forestry surface¹. The three biogeographical regions (Alpine, Atlantic and Mediterranean) creates a range of ecosystems such as alpine systems, fluvial and humid zones, woods and thickets, pastures and steppes.

Forests and woods have the best conservation status, according to the RDP. In terms of an ecosystem approach they represent an important area (about 60% of Navarra's territory), and therefore play a key role in preserving biodiversity. Traditional forest exploitation systems continue in Navarra. The landscape forms a mosaic of vast wooded stretches, thickets and scrub formations, wooded pasture, grassy patches, agricultural crops and reforestation.

Agriculture and cattle farming represent significant land uses, influencing the Navarra landscape. In the mountain areas, overgrazing puts the greatest pressure on pasture habitats. The agrarian landscape is mainly formed of cereal steppes, agro-forestry areas, bocage, olive, almond and wine cultivation, extensive pastures, grassland, meadows and steppes, the latter having the worst conservation status. In terms of irrigation, 25% of the cultivated agricultural land is irrigated. About 33% of the agricultural surface is classified as a less favoured area¹ (Gobierno de Navarra 2007b).

Pillar 1

The *Single Payment Scheme (SPS)* was introduced in Spain in 2006 according to the Historical Model, which does not include any regional options. Therefore, in Navarra, payments are based on historic subsidy receipts. Consequently, the *cross compliance* provisions to which farmers must comply are defined at the national level. No information is available on farmers' actual compliance with established community legislation, such as the Nitrates Directive or Birds and Habitats Directives, known as

¹² Press Release Memo/07/480 Rural Development Plan in Spain: Navarra. Brussels, 21 November 2007.

Statutory Management Requirements (SMRs) (Annex III 1782/2003). The second cross compliance component of *Good Agricultural and Environmental Condition (GAEC)* emphasises farmers' obligations in relation to soil (Annex IV 1782/2003):

Soil Erosion

- Management Rules for permanent crops and for arable crops;
- Minimum soil coverage rules for permanent crops, arable crops, non-cropped land and areas with high risk of soil erosion;
- Maintenance of terraces.

Soil Organic Matter

- Prohibition to burn stubbles unless authorised;
- Management of remains of harvest.

Soil Structure

- No vehicle passing or tillage on saturated soils or flooded areas unless authorised.

Soil management standards mainly address the threat of soil erosion in Spain. A more direct benefit to biodiversity can be expected from the obligations for **Minimum Levels of Maintenance**:

- Protection of permanent pasture against under- and overgrazing, burning or ploughing;
- Maintenance of terrain structure;
- Maintenance of old olive groves;
- Presence of sealed manure or slurry storage facilities on farms with indoor livestock;
- Farmers must have authorisation to irrigate from aquifers and install water measurement systems (MAPA 2005, Alliance Environnement 2007a).

In Spain, **Article 69** of Council Regulation 1782/2003 is used in various sectors. The proportion of national ceilings retained are as follows: beef (7%), dairy (10%), tobacco (5%), cotton (10%) and sugar (10%). The money retained from the SPS targets both quality production and the protection or improvement of the environment. In the bovine sector, Article 69 addresses the problem of overgrazing by granting top-ups to the suckler cow premium where stocking density is less than 1.5 LU/ha. This voluntary measure may improve the conservation status of pastures threatened by overgrazing and therefore could have positive effects on biodiversity (Alliance Environnement 2007b, Gobierno de Navarra 2007b).

Pillar 2

Strategic priorities and objectives

The four priorities of Navarra's Rural Development Plan (RDP) are:

- Competitiveness in the agri-food and forest sector;
- Environment and countryside;
- Quality of life and diversification of rural areas;
- Development of local capacity and diversification.

The first and second priorities correspond to the objectives under Axis 1 and 2 respectively, whereas the third priority is to be achieved by both measures from Axis 3 and 4. Finally, the fourth objective contributes to Axes 1 to 3.

The second priority 'Environment and country side', provides two objectives:

- Sustainable use of farmland:
 - Maintenance of farming in Less Favoured Areas (LFA);
 - Support farmers disadvantaged by Natura 2000 and WFD payments;
 - Reduction of nitrogen fertiliser and plant protection products use;
 - Maintenance and use of agricultural genetic heritage;
 - Response to the public demand of environmental production systems.
- Sustainable use of forestland:
 - Extension of forest resources on farmland;
 - Maintenance of biodiversity (Natura 2000 and HNV);
 - Green house gas reduction;
 - Soil Protection;
 - Restoring forestry potential;
 - Sustainable management of forests.

The sustainable use of farmland is primarily to be achieved through the maintenance of agriculture by compensatory payments to farmers in mountain areas and less favoured areas and by giving support to farmers who require support to meet their obligations with respect to the Habitats Directive. Within the farmland objective, the maintenance or enhancement of biodiversity in farmland is not directly mentioned. This aim can only be found in the forestland objective of Navarra's RDP.

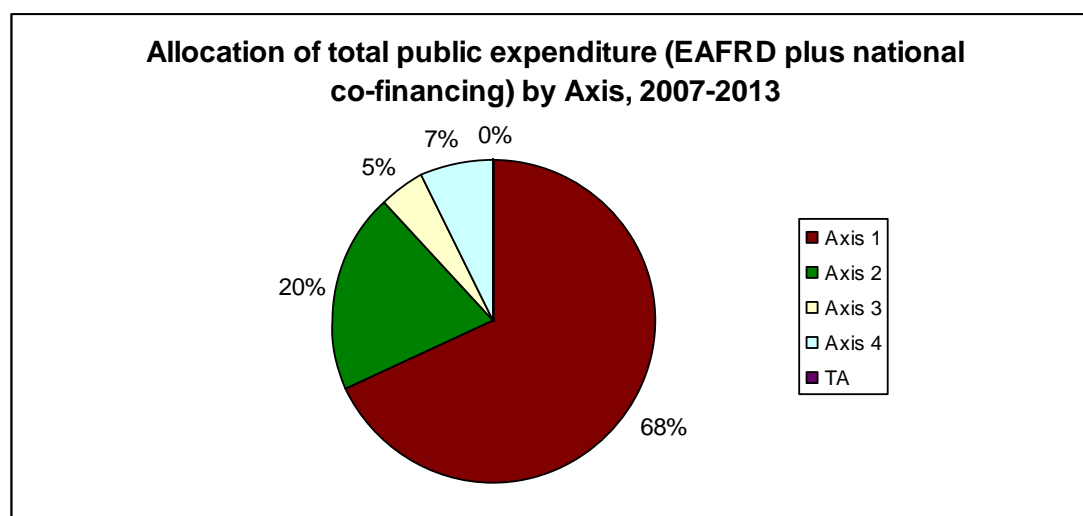
In order to achieve these objectives Navarra's Axis 2 of the RDP includes the following measures:

- Natural handicap payments to farmers in mountain areas;
- Payments to farmers in areas with handicaps, other than mountain areas;
- Natura 2000 payments;
- Agri-environmental measures;
- First afforestation of agricultural land;
- Restoring Forestry Potential;
- Non-productive investments (forests): sustainable management.

Funding

A total of €327m of public money is allocated to the Navarra rural development programme. €112m is provided by the EAFRD. For the 2007-2013 period, only one fifth of the total public expenditure is allocated to Axis 2 (see Figure 4). This is clearly given lower priority than Axis 1, to which more than two-thirds of RD expenditure is allocated. The total amount of funding available for Axis 2 is three times less than the amount allocated to Axis 1. An additional €56m of state aid is allocated to Axis 2, which nearly doubles the total amount of financial resources available. In the same way, the already well financed Axis 1, receives more than €100 million of extra money through additional national financing. Axes 3 and 4 receive very little funding and practically no money is attributed to Technical Assistance.

Figure 4: Total Public Expenditure by Axis 2007-2013 for Navarra



Source: Gobierno de Navarra 2007b

Within Axis 2 more than half of total expenditure (60%) is allocated to objectives in the forest sector. In absolute figures, the highest amount (€26m) goes to non-productive investments in forests, and only about half of that amount (€14m) is spent on the agri-environment measure (see the table below). However, this amount is topped up by €27m of additional state aid, nearly tripling the support for AEMs, which under these terms represents the biggest spending of Axis 2. Only 3% of Axis 2 spending is allocated to Natura 2000 payments; this measure receives no state aid supplement. Together, 16% of the total public expenditure within Axis 2 is allocated to the two LFA measures. Both receive additional state aid, totalling €22.4m (Gobierno de Navarra 2007b).

Table 7: Allocated EAFRD Expenditure by Measure for Navarra 2007-2013.

Axis	Measure	EAFRD incl co-financing (Euros)	% of total public expenditure	% of Axis	Private Expenditure (€)	Additional National Financing (€)
1	Modernisation of agricultural holdings	81,193,277	25%	37%	156,847,909	
1	Infrastructure related to development and adaptation	76,019,984	23%	35%	17,581,957	
1	Adding value to agricultural and forestry products	43,696,768	13%	20%	202,369,545	101,505,945
2	Non-productive investments (forests)	26,631,650	8%	40%	12,007,882	
4	Local strategies: quality of life/diversification	15,150,000	5%	64%	18,032,160	
2	Agri-environment payments	14,539,269	4%	22%	0	27,525,287

1	Setting up of young farmers	8,275,176	3%	4%	7,866,128	14,981,320
2	Natural handicap payments to farmers in mountain areas	8,192,087	3%	12%	0	16,799,481
3	Conservation and upgrading of the natural heritage	7,920,000	2%	51%	0	
2	Restoring forestry potential	6,359,782	2%	10%	0	
1	Early retirement	5,764,336	2%	3%	0	4,622,133
2	First afforestation of agricultural land	5,683,909	2%	9%	430,779	2,032,258
3	Business creation and development	3,765,880	1%	24%	3,430,069	
3	Diversification into non-agricultural activities	3,719,450	1%	24%	3,387,780	
1	Use of advisory services	3,393,736	1%	2%	848,434	
4	Local action group	3,128,000	1%	13%	0	
2	Payments to farmers in areas with handicaps, other than mountain areas	2,940,644	1%	4%	0	5,759,822
4	Local strategies: environment/land management	2,400,000	1%	10%	2,400,000	
2	Natura 2000 payments and WFD payments	2,208,344	1%	3%	0	3,807,679
4	Local strategies: competitiveness	2,000,000	1%	8%	2,000,000	
1	Improvement of the economic value of forests	728,104	0.2%	0%	755,064	
4	Cooperation projects	1,100,000	0.3%	5%	122,210	
1	Implementation of advisory services	600,000	0.2%	0%	600,000	

Source: Gobierno de Navarra 2007b

Measures

The contribution of measures to the conservation of biodiversity can be considered in three ways:

- Measures which directly benefit biodiversity
- Measures which indirectly benefit biodiversity
- Measures which may have negative impacts on biodiversity

Measures expected to directly benefit biodiversity

The two RD measures expected to have a positive effect on farmland biodiversity are AEM and Natura 2000 payments. However, these measures receive only 4% and 1% of total public funding respectively:

Agri-environment measure

Agri-environment measures (AEM) are in place to meet threats to Navarra's natural environment, such as erosion, water shortages and contamination and habitat loss including pasture habitats. In order to support sustainable agriculture, four types of actions are proposed under the AE scheme:

- Organic farming (58% of total public funding for the agri-environment measure);
- Conservation of endangered rare breeds (12%);
- Maintenance and enhancement of Steppe zones (15%);
- Maintenance of biodiversity and landscape (13%).

Obviously more than half of the resources are allocated to organic farming. Notwithstanding its high environmental standards, organic farming can be a fairly intensive farming system and therefore deliver a less direct benefit to biodiversity than more targeted schemes, which each receive only about 15% of the total public funding.

The steppe zones scheme addresses the specific requirements of priority birds in steppe areas and dry crop farmland which are of the highest conservation interest. The scheme will start in 2009, targets 20,000 ha and receives 15% of the total public expenditure for the AEM. However, a more specific measure for carrion eating birds could improve the conservation status of these birds which are protected at European, national and regional level (SEO/Birdlife 2007). The maintenance of biodiversity and landscape scheme includes requirements beneficial to farmland biodiversity such as buffer strips, field margins and maintenance of hedges, trees, stonewalls and terraces. The horizontal scheme will start in 2009, targets 7,700 ha and receives 13% of the total public expenditure for the AEM (214) (Gobierno de Navarra 2007b).

No particular AEMs are proposed to maintain traditional farming practices in the 'campiña' areas, which create the typical open mosaic landscapes. However, they represent a lower conservation need than the extremely threatened steppes. Wetlands and lagoons can be of high environmental importance locally and could benefit from conservation management measures, but are not included in this programme (SEO/Birdlife 2007).

Natura 2000 payments

The objective of this support is to maintain and enhance grazed habitats included in the Sites of Community Importance (SCI). This is to be achieved by regulating (over-) grazing both in steppe and mountain areas. Requirements are targeted towards the management of habitats and less towards the needs of particular species. While farmers' commitments are relatively general, it is expected that a reduction in overgrazing - the main problem in Navarra - can be achieved. The coverage of the measure is improving, and until 2013 it will support grazing management on a maximum of 25% of the surface of the Natura 2000 network (almost 63,000 ha). This is not a high target since 17% of the Natura 2000 area already benefited from the same support before the start of the new programme period. Natura 2000 payments

are expected to have a positive impact on biodiversity, however only 1% of total public expenditure is allocated to this measure.

Measures expected to indirectly benefit biodiversity

Less Favoured Area (LFA) in mountain areas and other areas

Together, 16% of the total public expenditure within Axis 2 is allocated to the two LFA measures. In Navarra, 33.64 % of the agricultural surface is declared as LFA. In the declared areas, farmers receive support for maintaining agricultural activity and must comply with cross compliance standards. Particularly in the mountain areas, overgrazing is the main threat; this could be improved by applying the criteria of a maximum Livestock Unit of 2 per hectare of forage area. Where rainfall is less than 800mm lower stocking densities apply. Both the prevention of overgrazing and undergrazing (in the case of abandonment) can have positive effects on farmland biodiversity (Gobierno de Navarra 2007b, SEO/Birdlife 2007). However in Spain, not all farms within an LFA receive a compensatory allowance. The eligibility criteria result in the exclusion of the smallest farms, in terms of size, and the more vulnerable, in terms of the employment status of the farmer. In general, low payment rates have small effects in terms of enhancement of environment and biodiversity (IEEP 2006).

Non-productive investments (forests): sustainable management

According to the National Strategy priorities the application of forestry measures is compulsory in all Spanish RDPs, in order to establish the Natura 2000 network in forest areas. With 40% of the Axis 2 spending allocated to this measure, Navarra is giving the highest priority to the sustainable management of forests. This reflects the fact that a significant part of Navarra's territory (24.3%) is Natura 2000 forest areas. This support can be expected to have positive effects on biodiversity in general, as well as an indirect positive effect on farmland biodiversity, since Navarra's forest areas include sparse thickets and wooded pastures. The non-productive investments are eligible for all forests both within and outwith Natura 2000 areas and include the following actions:

- Restocking forests with species of medium/long term rotation time and maintenance (about 32 % of total public funding including additional state aid allocated to measure 227);
- Forestry labours (about 37%);
- Conservation of biodiversity (about 13%);
- Landscape and recreation aspects (about 3%);
- Specific investments in Sites of Community Importance (SIC) (about 16 %).

The financial plan details the total public expenditure allocated to each action, differentiating the application of actions within and outwith the Natura 2000 network. About one third of the public funding is targeted at forests within the Natura 2000 network (Gobierno de Navarra 2007b).

Restoring forestry potential and introduction of preventive measures

The objectives of this measure - allocated 10% of total Axis 2 public expenditure - are stated not only in terms of forest protection against fires and other natural risks, but also in terms of maintenance of biodiversity in the total territory and mitigating for climate change. Regarding the latter objectives, the measure could bring benefits to biodiversity in general and to a lesser extent to farmland biodiversity (Gobierno de Navarra 2007b). However, the fire prevention measures (fire lines, runways and

aggressive forest treatments), even though potentially preventing catastrophes, could cause direct negative impacts on biodiversity (SEO/Birdlife 2007).

Measures which may have negative impacts on biodiversity

First afforestation of agricultural land

The deficit in forestry products, the abandonment of rural areas and soil erosion provide the rationale for using this measure. Conditions are applied to prevent afforestation in areas where it would cause conflicts with the conservation of environmental values however, this measure may have negative impacts on biodiversity, especially on farmland biodiversity. Agricultural land on which afforestation will be allowed includes both natural and artificial meadows as well as pastures and thickets. Proposed actions include poplar plantations, which because of their monocultural aspect and intensive management must be seen critically in terms of biodiversity. The design of the measure does however intend to favour the diversity of tree species, forest structures and management methods. But, the proposed tree species list includes a number of introduced species, which in the context of invasive alien species could cause a threat to Navarra's biodiversity. Support is given to both the establishment of forests and their maintenance, as well as compensating income loss and represents 9% of the total public expenditure within Axis 2 (Gobierno de Navarra 2007b).

Modernisation of agricultural holdings

Navarra allocates the largest share of total public funding (25%) to this horizontal Axis 1 measure, which aims to support investments for the:

- Promotion of efficiency and rational organisation of the agrarian production sector, especially:
 - Implementation and modernisations of efficient holdings;
 - Diversification of production;
 - Creation or improvement of holdings in sensitive areas (mountain zones and less favoured areas).
- Security of labour.
- Promotion of the protection of the environment, especially:
 - Improvement of installations which reduce or eliminate environmental impacts, particularly in the management of waste and sub-products;
 - Development of bioenergy and strengthening its use;
 - Actions to reduce and correct effects of erosion;
 - Actions and equipment to achieve a more efficient water use and a minor impact on its quality.
- Production under quality and food safety criteria.

The objectives of the measure are very varied with possibly different effects. Within the first sub-measure modernisation and diversification could have negative impacts on biodiversity. The targeting of sensitive areas could be beneficial and detrimental at the same time. If land abandonment can be avoided it may have a positive impact on biodiversity. However, the creation of holdings or the intensification of existing ones, may be harmful to biodiversity. Water, waste and soil management under the second sub-measure could improve the environment, but this sub-measure only targets 4.4% of the total beneficiaries. However, the support of bioenergy could involve short

rotation coppice plantations with negative impacts on biodiversity (Gobierno de Navarra 2007b).

Conclusions

Compulsory cross compliance is the main instrument of Pillar 1 to achieve improved environmental conditions in farmed areas. As in all other Member States and regions, more data is required in order to analyse the outcomes of the recently introduced cross compliance standards. In Spain, no information is available on farmers' actual compliance with the Statutory Management Requirements (SMRs). As a result, it is too early to say whether cross compliance will result in improved compliance with established community legislation, such as the Nitrates Directive or Birds and Habitats Directives. Spain introduced comprehensive GAEC standards focussing on soil protection, which address the main threat of soil erosion. Spain's GAEC also include a number of standards under the obligations for Minimum Levels of Maintenance which deal, for instance, with overgrazing, the main threat of pasture habitat decline. Other biodiversity and resource protection issues are taken up as well. Voluntary top-up payments for meeting lower stocking densities under Article 69 may improve the conservation status of pastures threatened by overgrazing and could have positive effects on biodiversity.

Pillar 2 seems to be strikingly unbalanced in Navarra. The RDP gives a significant priority to Axis 1, leaving Axis 2 with a poor 20% of the funding. Closer study shows however that additional state aid nearly doubles the total amount of funding available for Axis 2. The largest share of funding within Axis 2 goes to forestry measures, which reflects the importance of forest land in Navarra, both in area and in biodiversity conservation terms. However, the targeting of biodiversity within Axis 2 and within the AEM could be improved. The allocation of funding to the AEMs, even though large amounts of additional state aid are added, is comparatively poor. Within the AEMs, less than half of the spending goes to specific environmental schemes, supporting the conservation of endangered habitats and species. More general measures such as LFA may help maintain appropriate levels of grazing, but the stocking densities may not be sufficiently precise to avoid overgrazing.

Navarra's RDP addresses key environmental and conservation issues but does not give the necessary priority to them in terms of funding. Greater emphasis is given to measures such as the modernisation of agricultural holdings and infrastructure and development, which may be neutral in relation to biodiversity or, in the worst cases, may have detrimental effects on biodiversity.

References

Alliance Environnement (2007a) Evaluation of the Application of Cross Compliance as foreseen under regulation 1782/2003. Part I: Descriptive Report, IEEP, Oréade-Bèche, July 2007.

Alliance Environnement (2007b) Evaluation of the environmental impacts of the CAP measures related to the beef and veal sector and the milk sector. IEEP, Oréade-Bèche, December 2007.

Gobierno de Navarra (2007a) Geografía y población. http://www.navarra.es/home_es/Navarra/Asi+es+Navarra/Geografia+y+poblacion/.

Gobierno de Navarra (2007b) Programa de Desarrollo Rural de la Comunidad Foral de Navarra 2007-2013 volumen 1. Departamento de Agricultura, Ganadería y Alimentación, Pamplona, 19 November 2007.

IEEP (2006): An Evaluation of the Less favoured Area Measure in the 25 Member States of the European Union. Institute for European Environmental Policy, London.

MAPA (2005) Guía de la Condicionalidad: Buenas condiciones agrarias y medioambientales. Ministerio de Agricultura, Pesca y Alimentación. Press Release Memo/07/480 Rural Development Plan in Spain: Navarra. Brussels, 21 November 2007.

<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/480&format=HTML&aged=0&language=EN&guiLanguage=en>.

6 Case Study Report: Portugal

Author: Martin Farmer

Introduction¹³

The size of both agricultural and forest holdings in Portugal are considerably lower than the EU average. The average area of farm holdings is 10.8 ha, compared to an EU average of 20 ha. Much of mainland Portugal is dependent on irrigation in order to make agriculture economically viable. The total irrigable area in 2005 was 613,209 ha, equivalent to 17% of the total UAA. There were nine drought years recorded between 1965 and 2005. Significant water deficits result in a high risk of forest fire, with the small size of forest holdings regarded as creating an impediment to efficient fire fighting. Forestry is an important part of the Portuguese economy and, as with agriculture, contributes 3% to GVA. The standard of professional forest management is considered quite poor, and forests are regarded as vulnerable to pest risks, partly due to the effects of climate change. The high cost associated with maintaining extensive meat systems is noted by the programme.

The population of rural areas has decreased, especially among the younger age brackets. The low population density, the aging population, the loss of farmland (the UAA declined by 5% between 1995 and 2003) and small property size are key characteristics of rural Portugal.

The Environmental Context

The extensive cultivation of irrigated crops is stated as 'quite significant' with non-irrigated crop systems stated as being especially associated with biodiversity. A definition of extensive irrigation systems is not provided.

According to figures in the rural development programme, the extensive annual crop area forms 26% of total UAA, and the extensive pasture area 38% of UAA. Extensively farmed areas are likely to be associated with a higher incidence of biodiversity and contribute less to problems of soil and water quality/quantity that may arise as a result of inappropriate agricultural input use or excessive water use. Compared to the EU as a whole, a large part of Portugal's agricultural and forest area is designated as part of the Natura 2000 network. In 2005, 21% of the total farm and forest area fell within the Natura 2000 network, against an EU average of 13%.

Given the characteristics identified above - the low population density, the aging population and the loss of farmland - marginalisation and abandonment are key threats. Land abandonment is often understood to result in negative impacts on farm biodiversity, although in certain circumstances natural succession and afforestation may provide a more heterogeneous habitat at the landscape scale. A total of 74% of the total territory is therefore classified as at risk of marginalisation. As a result, the LFA covers 87% of UAA and there are 120,000 beneficiaries.

¹³ The following information is summarised from the 2007-2013 Rural Development Plan for Portugal, October 2007 Revision, Unofficial Translation.

Biodiversity data seems sparse for Portugal. No data appears to have been collected for the farmland bird index, for example. The description of biodiversity in the RDP is mostly limited to a consideration of crop varieties at risk of extinction. Some agricultural landscapes are described as high nature value, including oak forests (montados) and chestnut tree groves. The use of the actual measures does highlight that birds of conservation concern are targeted by the programme, and therefore it is surprising that there is little reference to birds or other flora and fauna in the analysis of rural development needs in the earlier parts of the programme.

With respect to water quality and quantity, nitrogen levels are some way below the EU average, according to the RDP. Irrigation is widespread and a National Water Plan foresees an improvement in efficiency. Soil erosion is a particular problem, with 70% of mainland Portugal susceptible to desertification. Soil loss due to water erosion is three times the EU average. Agriculture contributes 10% of Portugal's greenhouse gas emissions.

The main forest species are maritime pine, cork oak and eucalyptus. The unsuitability of some species planted in the past is an issue, and revised forest planning is looking to address this. The multifunctional role of forests is stressed in terms of its contribution to soil conservation, carbon sequestration, biodiversity and leisure opportunities.

Pillar1

In Portugal a historic model for the Single Payment Scheme (SPS) was introduced in 2005. A number of payments remain coupled, as follows: 100% of the suckler cow premium, 100% of the slaughter premium for calves, 40% of the slaughter premium for bovine adults, 50% of sheep and goat premium and 100% of the seeds premium. The retention of coupled livestock support payments may be important to maintaining agricultural activity across Portugal and so long as stocking densities are appropriate, provide a means to maintain farmland biodiversity. Portugal also makes use of Article 69 applying a small 1% reduction of the envelopes for arable crops, rice, bovine and ovine sectors, as well as for olive oil and sugar. No information is available on how Article 69 will be applied.

Portugal uses the voluntary modulation mechanism, applied at a rate of 10% each year from 2008 to 2012. The money created is split equally between measures to support the Natura 2000 Network and at 'structuring projects'.

The main mechanism applying any controls to farmers' responses to the subsidy regime is *cross compliance*. The cross compliance standards applied in Portugal are reviewed below.

SMRs

The SMRs set for the Birds and Habitats Directives are those which are likely to have the most significant bearing on biodiversity. According to the most recent evaluation

of cross compliance¹⁴, implementation of the SMRs for these two Directives in Portugal is comprehensive. Very few breaches of these SMRs appear to have been detected on on-the-spot compliance checks. The inclusion of these two Directives in the SMRs, and the attachment of compliance to receipt of the Single Payment, should help to raise awareness of farmers' obligations

GAEC

The GAEC standards include a number of basic requirements that could help to protect farmland biodiversity if observed properly at the farm level. However, there are a number of derogations available, that is enacted could result in a negative impact.

The minimum maintenance requirements mean that no more than 25% of a plot can be occupied by woody plants higher than 50cm. In some situations, this may disrupt habitat heterogeneity which could be beneficial to wildlife at the broader landscape scale. Whilst the control of natural vegetation should not be carried out during March and April, the main bird breeding season, the regional directorate of agriculture may give permission for farmers to derogate from this requirement. This could result in negative impacts on farmland biodiversity, depending on the species present and the frequency with which such derogations are granted. In addition, agricultural plots with a stocking density of more than 0.15 LU/ha are excluded from this requirement for some reason, further watering the standard down.

One potentially positive measure is the requirement to create a 3m wide next to set-aside land, land in fallow and unirrigated forage areas. Whilst this is an artificial creation for the purpose of GAEC, it may provide a buffer to protect species associated with these habitats. The other GAEC provisions concern soil cover and soil management and are not likely to impact on biodiversity.

Permanent Pasture

When the annual ratio falls to below 90% of the national reference, permanent pasture must be re-established until 92% of the reference level is achieved. Re-established plots of permanent pasture must be retained for a minimum of five years. These rules are important in Portugal, given the high proportion of extensive pastures across the country. The level of protection could be improved if the EU rules could be adapted to prevent the most ecologically valuable pasture from being converted.

Pillar 2

There is a notable emphasis on forestry and irrigation throughout the rural development programme. The forestry measures do not look as if they will create environmental damage, with a focus on native species and appropriate planning and management. The irrigation measures could however be harmful to biodiversity.

¹⁴ Alliance Environnement (2007) Evaluation of the Application of Cross Compliance as foreseen under Regulation 1782/2003. Part 1: Descriptive Report and Part 2: Replies to Evaluation Questions. Reports for DG Agriculture

An innovative element of the programme is to support sustainable land management through the creation of eight so-called 'Integrated Territorial Interventions' (ITIs) in discrete geographical areas that contain a large proportion of Natura 2000 sites. The ITIs are a key delivery method of several Axis 2 measures including the agri-environment measure and the forest-environment measure and will be applied in under the direction of a co-ordinating body, also funded by the RDP. In contrast, the main agri-environment measure that applies outside of these zones is severely limited in scope and ambition and focuses only on conserving genetic diversity and the promotion of integrated farming and organic farming. This means that Portugal is focusing on the most environmentally valuable areas – a potentially sensible use of resources - but means that appropriate agricultural management, where it is necessary, is unlikely to be supported outside of these key zones.

Strategic priorities and objectives

With respect to the environment and land management the following needs are identified:

- Compensation to producers for natural handicaps and to sustain farm holdings in less favoured areas.
- To make agricultural activity more attractive to young people.
- To sustain nature and landscape values.
- To sustain agricultural systems in Natura areas.
- To correct effluent related environmental problems.
- To encourage more efficient use of water.
- To act from a land use planning perspective.
- To guide producers to a good use of natural resources.
- To valorise agricultural and forest by-products through bio-energy production.
- To reduce fire risks and increase preventative action.
- To decrease GHG emissions.
- To promote joint initiative and management.

The main threats are stated to be the risk of marginalisation, land abandonment and fire risk.

These rural development needs will be achieved through four objectives:

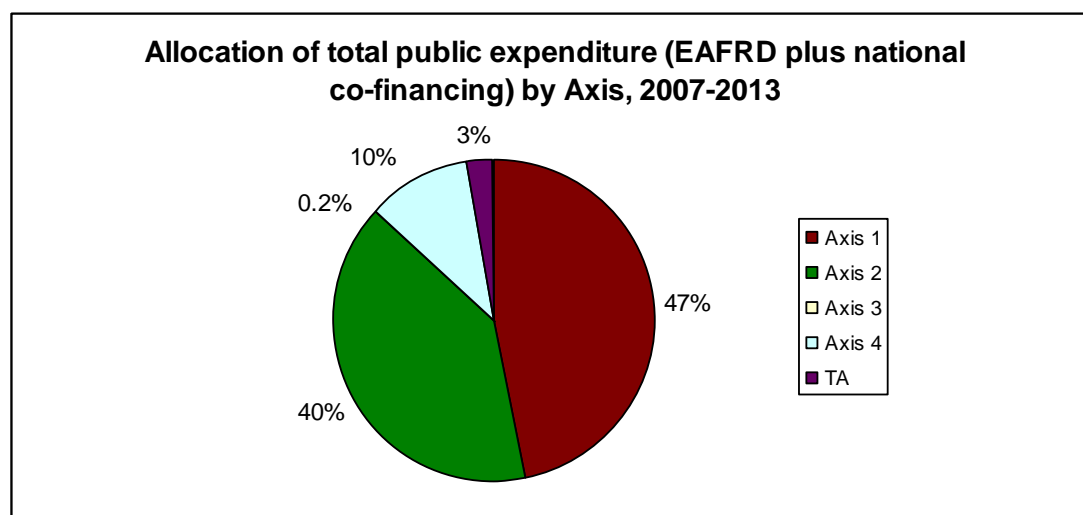
- Promoting the protection of biodiversity and high nature and landscape value systems associated with agricultural and forestry systems.
- Encouraging the introduction or maintenance of production methods compatible with the protection of environmental values, and of water and soil within the framework of agricultural and forestry activity.
- Improving the sustainability of forest stands.
- Preserving agricultural activity in less-favoured areas.

Funding

The total amount of allocated public expenditure (i.e. from the EAFRD and including the amount co-financed by the national government) over the 2007-2013 period is €4.4 bn. The contribution of the EAFRD is €3.4bn. Figure 5 shows the allocation of RD spend for the 2007-2013 planning period by Axis and is indicative of the priority given to the above stated objectives. It illustrates that the greatest proportion of

funding is to be given to Axis 1 (47%) and the next largest amount to Axis 2 (40%) with the smallest amounts allocated to Axis 4. The low amount allocated to Axis 3 is explained by the fact that since Axis 4 is largely delivered through Axis 3.

Figure 5 Total Public Expenditure by Axis 2007-2013 for Portugal



Portugal uses the voluntary modulation mechanism, applied at a rate of 10% each year from 2008 to 2012. The money created is split equally between measures to support the Natura 2000 Network and at 'structuring projects'.

The corresponding measures, funding and their percentage of RD funding as a whole are shown in the table below.

Table 8. Allocated EAFRD Expenditure by Measure for Portugal 2007-2013.

Axis	Measure	EAFRD incl co-financing (Euros)	% of total public expenditure	% of Axis	Private Expenditure (€)	Additional National Financing (€)
1	Infrastructure related to development and adaptation	792,018,409	18%	38%		
2	Natural handicap payments to farmers in mountain areas	669,740,677	15%	38%		
1	Adding value to agricultural and forestry products	442,883,083	10%	21%	634,699,000	
2	Agri-environment payments	433,973,775	10%	24%	11,779,070	
4	Local strategies: quality of life/diversification	352,940,660	8%	78%	356,902,722	
1	Modernisation of agricultural holdings	346,265,267	8%	17%	579,449,844	
2	First afforestation of agricultural land	317,142,876	7%	18%	16,400,583	
1	Setting up of young farmers	156,802,297	4%	8%		

2	Restoring forestry potential	138,657,624	3%	8%	50,335,940	
1	Improvement of the economic value of forests	128,110,813	3%	6%	164,141,980	
4	Local action group	87,433,498	2%	19%		
2	Payments to farmers in areas with handicaps, other than mountain areas	86,073,101	2%	5%		
2	Non-productive investments (forests)	71,226,564	2%	4%	15,337,331	
1	Early retirement	43,598,590	1%	2%		
1	Setting up of management, relief and advisory services	41,369,117	1%	2%	41,369,117	
1	Cooperation for development of new products, processes and technologies	37,365,654	1%	2%	16,013,852	
2	First afforestation of non-agricultural land	34,718,418	1%	2%	9,239,765	
1	Vocational training and information actions	33,422,243	1%	2%	10,318,375	
1	Restoring production potential damaged by disasters	20,017,314	0.5%	1%	30,025,971	
2	Forest environment payments	14,110,344	0.3%	1%		
4	Cooperation projects	12,559,875	0.3%	3%	8,373,250	
1	Use of advisory services	12,010,389	0.3%	1%	12,010,389	
1	Information and promotion	11,209,696	0.3%	1%	11,209,696	
1	Participation in food quality schemes	8,674,170	0.2%	0.4%		
1	Meeting standards	7,206,233	0.2%	0.3%		
2	First establishment of agroforestry systems	6,929,824	0.2%	0.4%	4,619,883	
3	Conservation and upgrading of the natural heritage	6,686,632	0.2%	100%		
2	Non-productive investments (agriculture)	4,233,103	0.1%	0.2%		

The measure allocated the greatest amount of funding is ‘Infrastructure related to development and adaptation’, which is set to receive €792m, equivalent to 18% of total public expenditure. This measure will essentially be used for irrigation. The natural handicap payment to farmers in mountain areas is allocated the second largest amount and will account for 15% of total public expenditure. A total of €433m is allocated to the agri-environment measure; this is 10% of total public funding.

Portugal is not using either of the Natura 2000 measures. Compensation for the cost of the management of Natura 2000 sites looks set to be delivered through the agri-environment and forest-environment measures, at least in the case of the eight ITIs. Aside from the Natura 2000 payment for forests, all other Axis 2 forestry measures will be used in Portugal, underlining the importance given to supporting this sector.

Measures

The contribution of measures to the conservation of biodiversity can be considered in three ways:

- Measures which directly benefit biodiversity
- Measures which indirectly benefit biodiversity
- Measures which may have negative impacts on biodiversity

Measures expected to directly benefit biodiversity

The measure expected to be of most direct benefit to biodiversity, in most situations, is the *agri-environment measure*, allocated 10% of total public funding. Eight Integrated Territorial Interventions (ITIs), which target sustainable land management at the landscape scale, utilise the agri-environment measure and look set to provide benefits to biodiversity in the areas they operate. However, in Portugal the focus of the main agri-environment scheme is on the promotion of organic and integrated farming and the conservation of genetic resources (rather than targeted habitat maintenance or creation, which would be expected to provide greater benefits to biodiversity). Outside of the eight ITIs, the agri-environment measure may fall short of the needs of biodiversity conservation.

Organic farming should provide improvements to soil and water quality and can provide benefits to biodiversity, depending on the management system being replaced. The eligibility criteria for the organic and genetic diversity measures allow a stocking density of up to 3 LU/ha, which may be set too high to prevent the negative impacts to grassland species diversity that are associated with overgrazing. The measure largely focuses on record keeping and is poorly oriented to biodiversity concerns. The genetic diversity measures focuses on the preservation of threatened species of cattle, sheep, goats, pigs, horses and hens as well as various pear trees, apple trees and fig trees. Whilst important in some respects, the measure will provide limited outcomes for farmland wildlife.

Whilst the main agri-environment measure may not promise too much for biodiversity, the eight priority landscapes targeted through the ‘Integrated Territorial Interventions’ measures look likely to provide benefits for biodiversity. This measure combines four Axis 2 measures (agri-environment, forest-environment, and the two non-productive investment measures) and one Axis 3 measure (conservation and upgrading of the rural heritage). It operates alongside a dedicated measure which provides support for the management of the ITIs (through the so-called Local Support Structure) in order to target coherent management at the landscape scale. The ITIs present an innovative approach to delivery that could provide clear benefits to biodiversity. However, the focus on the Natura network and the Douro Region, whilst representing a targeted approach to land management, may mean other agricultural areas are neglected.

The objectives of the ITIs are to:

- Provide agri-environment payments to: conserve high nature value cultivated areas and typical landscape features; preserve habitats and threatened flora and fauna species, and; conserve biodiversity levels.
- Provide forest-environment payments to: conserve or extend forest areas with native forest species and flora and fauna important to biodiversity wealth;

conserve threatened priority habitats, giving preference to ecological succession and favouring natural cycles.

- Provide non-productive investments to meet agri-environment and forest-environment objectives.
- Implement the ITIs through a 'Local Support Structure' (LSS), provided by Axis 3. The LSS will develop plans for the appropriate management of protected landscapes, raise awareness among the population affected by the ITI, draft information documents for beneficiaries and monitor the impact of actions.

Each ITI is specified in some detail in the RDP. Each ITI features a set of general commitments, common to all ITIs. These requirements are not dissimilar to the basic standards that could be provided for by GAEC, and include, for instance, a requirement for the preservation of landscape features. Each ITI is then differentiated by a set of specific and more ambitious agri-environmental and forest environment commitments. For example, the ITI for the Montesinho-Nogueira Natura 2000 site includes the following measures:

- Maintain HNV grasslands and riparian tree galleries. A number of species are dependent on this biotope to survive including the otter, the black stork and the water pipit.
- Promote 'dry' farming (i.e. without irrigation?) of grain crops in bi-annual rotation with fallow. This system is associated with the Montagu's harrier, the hen harrier and larks.
- Protection of isolated dry chestnut trees and old chestnut tree groves which provide a habitat for the marten and the common redstart.
- Preservation of indigenous woods with a high ecological value, promotion of natural regeneration by indigenous tree species and preservation of high altitude shrub (above 750m) associated with endangered species such as the ortolan bunting and the northern harrier.

In other ITIs grazing management is an important element. Typically a stocking density of 0.1 to 0.7 LU/ha is specified, which seems suitable to avoid under and over grazing.

Measures expected to indirectly benefit biodiversity

Measures which might be expected to indirectly benefit biodiversity are those which do not have specific environmental objectives but which seek to support certain types of farming or land management activity which, in turn, may benefit biodiversity. The *Less Favoured Area (LFA)* (natural handicap payments) measure can generally be considered in this way.

According to the RDP, the LFA measure is seen to compensate for lower incomes and meet environmental and cohesion objectives. Its main objective, according to the RDP, is to contribute to maintaining agricultural activity and thereby contribute to the continued use of farmland, the maintenance of the rural landscape and the conservation and promotion of sustainable agricultural production systems. The LFA covers 87% of UAA, as shown in the Figure below.

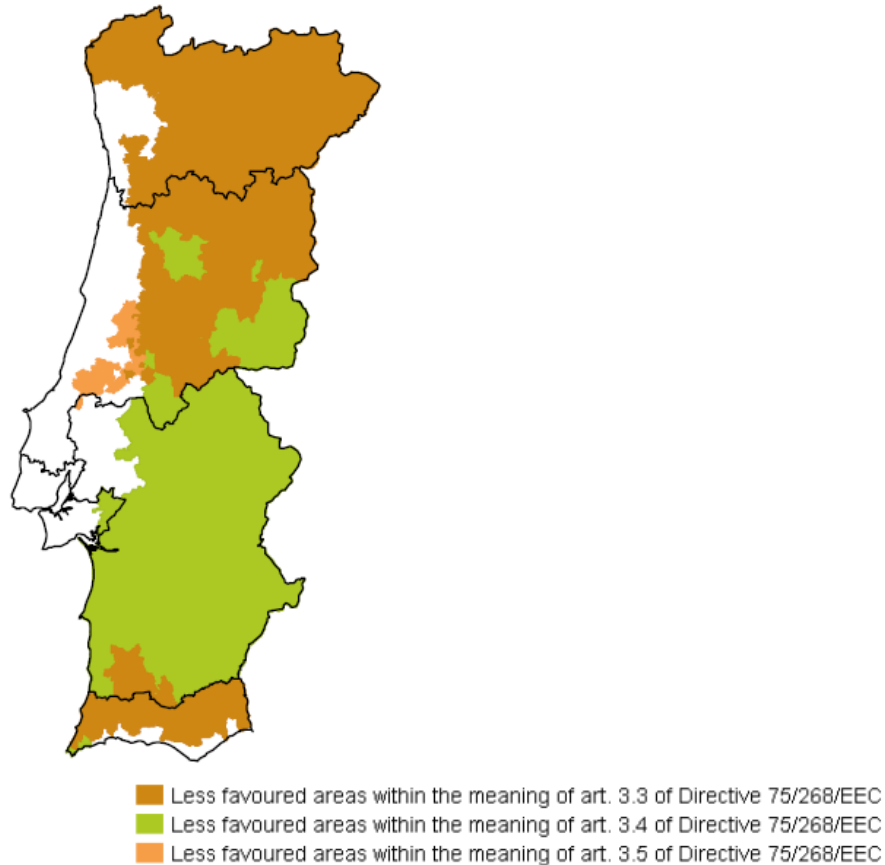


Figure 6. Map of LFAs in Portugal.

Both natural handicap measures are used (i.e. for farmers in mountain areas and in areas with handicaps other than mountain areas), and are split into two sub-measures to target agricultural activity inside and outside of the Natura network. The LFA covers most of Portugal and is classified according to altitude and slope in mountain areas; and poor soils and adverse weather conditions that result in production disadvantages in other less favoured areas. Potential beneficiaries are eligible if they are located entirely or partially within the LFA and if the UAA is at least 1 ha. The eligibility criteria also permit a high maximum stocking density - up to 3 LU/ha of UAA for farms in mountain areas. Grazing at this level may result in overgrazing and negative impacts on biodiversity. The maximum stocking density is 2 LU/ha of forage area for farms located in other LFAs, which again may not be sufficiently attuned to grassland conservation needs.

In addition to respecting cross compliance, beneficiaries must also comply with a series of additional commitments. Within the Natura area, this includes the maintenance of trees, dry stone walls and tree hedges located between or at the edge of parcels and the maintenance of trees and shrubs located along water courses. Provided these conditions are met and extensive grazing takes place, benefits to biodiversity should follow. However, as with the basic standards for the ITIs, it seems such basic requirements could be provided by cross compliance GAEC, unless significant time consuming active management is required.

Evaluations of the previous RD period showed that the compensatory payments were insufficient to offset the competitive handicaps of farm holdings located in LFAs. Aid levels have therefore been increased for this period. This may be important for stemming the trend towards land abandonment and maintaining extensive farming systems.

Forestry measures can sometimes be environmentally damaging, particularly if afforestation measures are used in an insensitive way. As noted above, the Portuguese RDP uses most of the available forestry measures, and they are considered together here because of the overlap between some of the measures. The RDP identifies three key needs for the forest sector – promoting environmental management, increasing competitiveness and decreasing fire risk. The RDP states that increasing forest area is not an objective of the programme.

The measure to improve the economic value of forests is used to provide aid to improve production in forest stands. Some of the supported investments, such as building roads, could be environmentally damaging. However, the measure also seeks to promote natural regeneration and provide aid to draft Forest Management Plans in order to obtain private certification. Both of these may be beneficial and unlikely to create negative impacts on biodiversity.

Axis 1 is used to provide a measure for ‘multi-functional management’ – **also implemented via the measure to improve the economic value of forests**. This measure seeks to develop the supply of goods and services provided by forest ecosystems in order to maximise environmental protection and social amenity roles. Similarly, an Axis 2 measure for the ‘environmental valorisation of forest areas’ – funded by **the measure for non-productive investments** – shares a similar objective, but is more targeted from an environmental perspective. In particular the measure seeks to convert eucalyptus stands to stands of native hardwoods, noble wood trees and carob trees. These trees, according to the RDP, are better adapted to climate and soil conditions. Measure 227 is also used to reduce the impact of harmful biotic agents such as pine wood nematode and the pests causing the decline of traditional oak plantations (montado) and chestnut trees.

The **first afforestation measures (for agricultural and non-agricultural land)** are targeted primarily at restoring forest production in areas affected by fires and harmful biotic agents. The focus is on the production of quality forest products such as noble woods and cork, and a clear sub-objective is to contribute to climate change mitigation, minimise soil erosion, protect water resources and improve biodiversity. In particular, fast growing species are excluded from receipt of funding.

The **agro-forestry measure** is also used in order to promote the complementarity between forest production and extensive livestock production, which may be beneficial to biodiversity if this is the traditional management system (note the measure itself only provides for the establishment of agro-forestry rather than ongoing management). This group of measures could be environmentally damaging depending on the biodiversity value of the land to be afforested. The focus on native species and conducting afforestation only where natural disturbances have occurred – rather than promoting the expansion of forest area – does decrease risk of environmental damage.

Measures which may have negative impacts on biodiversity

The measure that is likely to result in a negative impact on biodiversity is for ‘Infrastructure related to development and adaptation’, which is set to receive €792m, equivalent to 18% of total public expenditure. This measure is focused on irrigation.

Precautions with respect to biodiversity appear to have been taken, although it is not clear how environmentally damaging the supported actions might be. Whilst water scarcity is not a problem in Portugal, the RDP recognises a need for better water management and distribution. This measure therefore seeks in ‘a global and integrated way’ to ensure more efficient water use, whilst safeguarding natural values, landscape and streams. The main biodiversity safeguard within the measure requires account to be taken of the requirements arising from environmental impact reports and to not approve projects to be implemented in an Important Bird Area. However, one sub-measure - to fund the development of the Alqueva irrigation project - actually includes IBAs and SPAs within the geographical boundaries of the project (discussed further below). Outside of this project, it is not clear whether the environmental impact assessments will sufficiently take account of the potential environmental damage arising from schemes outside of the IBA which nonetheless may create negative impacts due to changes in water flow or groundwater levels. One of these measures seeks to increase water availability to fragmented rural plots and another seeks to modernise public irrigated plots.

The Alqueva irrigation project seeks to provide ‘a steady flow of quality water’ in order to promote opportunities for ‘wealth creation’ through ‘competitive market oriented agriculture’ and counter the trend of ‘human desertification’ in the Alentejo region. The RDP states that no project within the overarching project will be approved if the preservation of the IBAs and SPAs within the region cannot be guaranteed. A length annex to the main RDP outlines the approach to preserving biodiversity, but is not wholly convincing. A total of 10% of the beneficiary region is designated SPA, and 22% falls within the Natura 2000 network. The area and the traditional farming systems within it (characterised by fallows and crop rotation) provide good conditions for steppe birds such as the great bustard and the little bustard. Following a number of environmental impact assessments, an Environmental Management Programme has been established in an attempt to harmonise agricultural and conservation interests, for example through developing suitable management plans for SPAs with irrigated land. However, the negative impacts on biodiversity are not clearly specified, save for one section explaining that biodiversity actually increases in areas surrounding irrigated areas. Notably, the impacts within irrigated areas are not expressed. The authors of the RDP state irrigated land will comply with environmental legislation and seem confident negative impacts on biodiversity will not arise.

Conclusions

There are a number of key points arising from the analysis of CAP payments from a farmland biodiversity perspective. First, it seems that GAEC could be better applied. It is interesting that basic requirements to retain landscape features in the ITIs and the

LFA measure are contained within Pillar 2 and do not form part of the GAEC baseline (which allows for the retention of landscape features). The potential derogation to cut growth during the main bird breeding season is a concern. Second, the ITIs are a mixed blessing for biodiversity conservation. The targeted, integrated ITI schemes look to have great potential to benefit biodiversity. Various Axis 2 measures are integrated and look set to be delivered in a coherent way at the landscape scale. This is positive for the area within the ITI, but less so for the land outside – the agri-environment schemes which will operate outside of the ITIs do not offer great potential for biodiversity conservation. This set-up may represent a wise and judicious use of limited Pillar 2 funds. Third, the stocking density requirements in the LFA appear too high, although the additional conditionality on payments (i.e. to manage landscape features in N2000 sites) could be beneficial. Next, the forestry measures, as a whole, look environmentally neutral from a biodiversity perspective. The focus on native species (and accompanying conversion of eucalyptus stands) and multi-functionality is welcome. Use of the afforestation and agro-forestry measures requires monitoring. Finally, whilst some precautions have been taken with the various irrigation measures i.e. to not approve projects in an IBA, it is not clear how much attention has been given to the downstream effects of water abstraction outside the IBA. The assessment of the biodiversity impact of the Alqueva irrigation project requires careful scrutiny and monitoring of impacts over time.