



**Institute** for  
**European**  
**Environmental**  
**Policy**

**FIT FOR THE ENVIRONMENT:  
PRINCIPLES AND ENVIRONMENTAL PRIORITIES FOR THE 2014-2020 RURAL  
DEVELOPMENT PROGRAMMES**

**Produced for the RSPB**

**Prepared by**  
Ben Allen  
Clunie Keenleyside  
Henrietta Menadue

**Institute for European Environmental Policy (IEEP)**  
15 Queen Anne's Gate  
London  
SW1H 9BU  
United Kingdom

**August 2012**

**Disclaimer:** The arguments expressed in this document are solely those of the authors, and do not reflect the opinion of any other party.

**The document should be cited as follows:** Allen B, Keenleyside C and Menadue H (2012) *Fit for the environment: principles and environmental priorities for the 2014 - 2020 Rural Development Programmes*. Report produced for the RSPB. Institute for European Environmental Policy, London.

**Corresponding author:** Ben Allen ([ballen@ieep.eu](mailto:ballen@ieep.eu))

**Acknowledgements:**

We thank the Royal Society for the Protection of Birds (RSPB) for commissioning this work, in particular Thomas Lancaster as project manager who provided guidance throughout the study and Victoria Carr for her help in sourcing case studies from across the EU. We also thank Birdlife partners for their constructive comments on earlier drafts.

**Image copyright:**

Front cover and pages 14, 17, 32 and 66 © Ben Allen  
Pages 3, 42 and 51 – © Andy Hay, [www.rspb-images.com](http://www.rspb-images.com)  
Page 5 © Frederik Naedts

**Institute for European Environmental Policy**

London Office  
15 Queen Anne's Gate  
London, SW1H 9BU  
Tel: +44 (0) 20 7799 2244  
Fax: +44 (0) 20 7799 2600

Brussels Office  
Quai au Foin, 55  
Hooikaai 55  
B- 1000 Brussels  
Tel: +32 (0) 2738 7482  
Fax: +32 (0) 2732 4004

The **Institute for European Environmental Policy (IEEP)** is an independent not-for-profit institute. IEEP undertakes work for external sponsors in a range of policy areas. We also have our own research programmes and produce the Manual of European Environmental Policy (<http://www.europeanenvironmentalpolicy.eu>). For further information about IEEP, see our website at <http://www.ieep.eu> or contact any staff member.

## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>1.1</b>	<b>The current CAP reform proposals .....</b>	<b>1</b>
<b>2</b>	<b>ENVIRONMENTAL PRIORITIES FOR THE 2014-2020 RURAL DEVELOPMENT PROGRAMMES.....</b>	<b>3</b>
<b>3</b>	<b>KEY PRINCIPLES TO GUIDE THE DEVELOPMENT AND IMPLEMENTATION OF THE 2014 – 2020 RURAL DEVELOPMENT PROGRAMMES .....</b>	<b>5</b>
<b>3.1</b>	<b>Principles for use of CAP funds to support the provision of environmental public goods from farm and forest land .....</b>	<b>7</b>
<b>3.2</b>	<b>Principles for designing and targeting EAFRD national, regional or local schemes to meet environmental objectives and support provision of environmental public goods</b>	<b>10</b>
<b>3.3</b>	<b>Principles for effective and efficient delivery of EAFRD environmental schemes</b>	<b>11</b>
<b>4</b>	<b>DELIVERING ENVIRONMENTAL PRIORITIES USING EAFRD FUNDING.....</b>	<b>14</b>
<b>4.1</b>	<b>Relationship between EAFRD measures and environmental priorities .....</b>	<b>14</b>
<b>4.2</b>	<b>Delivering multiple environmental priorities.....</b>	<b>16</b>
<b>4.3</b>	<b>Key EAFRD measures to deliver environmental priorities .....</b>	<b>17</b>
	<b>BIODIVERSITY.....</b>	<b>17</b>
	<b>WATER.....</b>	<b>32</b>
	<b>SOIL .....</b>	<b>42</b>
	<b>CLIMATE CHANGE MITIGATION .....</b>	<b>50</b>
<b>4.4</b>	<b>Cross-cutting EAFRD measures that support capacity building and delivery .....</b>	<b>59</b>
<b>5</b>	<b>CONCLUDING REMARKS.....</b>	<b>65</b>
<b>6</b>	<b>BIBLIOGRAPHY.....</b>	<b>66</b>
	<b>ANNEX 1: THE COMMON STRATEGIC FRAMEWORK 2014 TO 2020 - KEY ACTIONS FOR EAFRD ON ENVIRONMENT, RESOURCE EFFICIENCY AND CLIMATE CHANGE .....</b>	<b>69</b>
	<b>ANNEX 2: EXAMPLES OF OPERATIONS AND COMBINATIONS OF MEASURES THAT COULD BE USED TO DELIVER ENVIRONMENTAL PRIORITIES .....</b>	<b>70</b>

## LIST OF TABLES

Table 1: Overview of EAFRD measures and their potential to deliver environmental priorities .....	15
Table 2: Example of operations and combinations of measures that could be used to deliver environmental priorities .....	70

## LIST OF FIGURES

Figure 1: Key principles to guide EAFRD support for the provision of environmental public goods.....	6
--	---

## ACRONYMS

<b>Acronym</b>	<b>Description</b>
<b>CAP</b>	Common Agricultural Policy
<b>CMEF</b>	Common Monitoring and Evaluation Framework
<b>CMO</b>	Common Market Organisation
<b>CSF</b>	Common Strategic Framework
<b>EAFRD</b>	European Agricultural Fund for Rural Development
<b>EFA</b>	Ecological Focus Area (part of the proposal for the greening of direct payments)
<b>ERDF</b>	European Regional Development Fund
<b>ESF</b>	European Social Fund
<b>FAS</b>	Farm Advisory System
<b>GAEC</b>	Good Agricultural and Environmental Condition
<b>GHG</b>	Greenhouse Gas
<b>HNV</b>	High Nature Value
<b>LAG</b>	Local Action Group (as referred to in the LEADER articles)
<b>LFA</b>	Less Favoured Area
<b>LPIS</b>	Land Parcel Information System
<b>NUTS</b>	Nomenclature of Territorial Units for Statistics
<b>PPP</b>	Plant Protection Products (pesticides, herbicides etc)
<b>RDP</b>	Rural Development Programme
<b>SME</b>	Small to Medium sized Enterprise
<b>SMR</b>	Statutory Management Requirement
<b>WFD</b>	Water Framework Directive

## USING THIS DOCUMENT

Produced for the RSPB this document is intended to support Member State and regional managing authorities in the design of their 2014 – 2020 Rural Development Programmes (RDPs) and ensure that environmental priorities and principles are embedded at the heart of this process. The document follows a logical structure outlined below and uses case study examples from the current programming period to highlight the environmental opportunities and risks of using the proposed measures under the European Agricultural Fund for Rural Development (EAFRD). The document is structured as follows:

### Section 1: The current CAP reform process

- This section provides a brief introduction to the CAP reform proposals, highlighting some of the challenges faced and the current uncertainties.

### Section 2: Environmental priorities

- This section sets out a series of environmental priorities in relation to rural development policy and demonstrates their link to the wider EAFRD priorities and those set out under the Common Strategic Framework (CSF). *These priorities should be reflected in the aims of RDPs and considered in the design of the individual measures and schemes.*

### Section 3: Principles to guide RDP development and implementation

- This section sets out a series of integrated principles to guide the use of CAP and EAFRD measures, and the development and implementation of RDPs. *These principles should guide RDP design and implementation both for environmental and other priorities.*

### Section 4: Delivering environmental priorities

- Referring to the principles and priorities from Sections 2 and 3, Section 4 shows the environmental potential of individual EAFRD measures. *Examples of opportunities and risks presented in this section can be used to think innovatively about the use of EAFRD measures, both in terms of how to deliver the most for the environmental challenges faced in different Member States, and how these approaches can be tailored to specific needs.*

### Section 5: Concluding remarks

- This section concludes by summarising the opportunities to improve environmental delivery through the EAFRD, and the challenges faced in light of the current reform process.

This document does not attempt to describe the whole process of designing an RDP, which should be familiar in all Member States (see WWF *et al*, 2005) but rather sets out the environmental priorities and key principles to guide this process in the context of the current CAP reform, and the opportunities to use the proposed EAFRD measures most effectively to improve environmental outcomes. The document relates specifically to the proposed EAFRD regulation (COM(2011)627/3). Much of the detail of CAP reform remains unclear and **the draft regulations will undergo further changes before they are finalised and brought into force in 2014**. This will reflect decisions to be made about Pillar 1 rules for direct payments (COM(2011)625/3) and in particular the potential greening requirements, as well as developments in EAFRD and related regulations. Many of the details of EAFRD measures will be determined by implementing regulations, not yet published. Although uncertainty remains about the detail of the measures, the priorities and principles outlined in this document will be applicable to the final Regulations as they appear in 2014.

## 1 INTRODUCTION

Environmental integration within all EU policies is a principle objective of the EU and has been reinforced through the priorities set out under the Europe 2020 strategy (European Commission, 2010). Few sectors affect Europe's environment and natural resources, both positively and negatively, as much as farming and land management (WWF *et al*, 2005) and with over 70 per cent of the EU land area in use for agriculture or forestry<sup>1</sup> all Member States face the challenge of maintaining efficient and productive agriculture and forestry sectors whilst ensuring environmental benefits are maintained and improved.

The European Agricultural Fund for Rural Development (EAFRD), part of the Common Agricultural Policy (CAP), provides an important source of funding for Member States to achieve these aims through their RDPs. The 2014 – 2020 programming period will see significant changes to the current CAP and this document is intended to help guide national or regional authorities through the new structure of the proposed EAFRD (COM(2011)627/3) and enable them to embed environmental priorities and principles in the design and implementation of their 2014 – 2020 Rural Development Programmes (RDPs).

### 1.1 The current CAP reform proposals

On 12 October 2011 the European Commission published the draft legislative proposals for the future CAP post 2013. They comprise a series of proposed new regulations covering all aspects of the CAP including: the Pillar 1 direct payments; Common Market Organisations (CMOs); the Pillar 2 EAFRD; as well as cross compliance, financing and monitoring and on transitional arrangements for 2013. These proposals, in particular the restructuring of Pillar 2 and the proposed greening element of Pillar 1 represent major changes from the status quo and will have significant impact on the 2014 – 2020 Rural Development Programmes.

For the 2014-2012 RDPs the Community Strategic Guidelines will be replaced by the elements for a Common Strategic Framework 2014 to 2020 (CSF), which sets out thematic objectives for the EAFRD and four other EU funds, under the proposed Regulation for common provisions<sup>2</sup>.

#### 1.1.1 Changes to Pillar 2

The changes set out for Pillar 2 relate particularly to the architecture of the regulation, and also in some cases to the content. Perhaps the most significant of these is the replacement of the four axes that characterise current RDPs, with six EU priorities for rural development, which relate to the thematic objectives of the CSF. These are:

1. Fostering knowledge transfer and innovation;
2. Enhancing competitiveness;
3. Food chain organisation and risk management;
4. Restoring, preserving and enhancing ecosystems;
5. Promoting resource efficiency and transition to a low carbon economy; and
6. Promoting social inclusion, poverty reduction and economic development of rural areas.

---

<sup>1</sup> Based on an analysis of LUCAS 2009 land use data for 23 Member States (excluding BG, RO, CY and MT).

<sup>2</sup> SEC(2011) 1141 final; SEC(2011) 1142 final and COM(2011) 615 final/2

**Member States will be expected to set out programmes showing how they will use the measures available to pursue these priorities within their national or regional contexts.**

Other notable changes to the EAFRD include the addition of 'climate' to the agri-environment and forest-environment measures, and the creation of a separate measure for organic farming (previously within the agri-environment measure). There is recognition of the benefits of collaborative action at the landscape scale, with higher transaction costs permitted within the payment calculation for group contracts involving more than one land manager.

The introduction of the new priorities, the removal of the four axes and the introduction of cooperative measures presents significant opportunities to move beyond the current framework to a more flexible approach allowing the more integrated use of measures to deliver environmental benefits. This document aims to highlight how these different measures can contribute to environmental priorities, often in combination.

### **1.1.2 Changes to Pillar 1**

The EAFRD measures will of course be implemented at farm level in the context of the significant and interrelated proposed changes to Pillar 1, which will affect how environmental priorities are delivered through the CAP. The most important of these is the proposal to allocate 30 per cent of Pillar 1 national ceilings to a 'greening payment'<sup>3</sup>. To receive this greening payment, farmers will be required to follow requirements for crop diversification on arable land, maintenance of permanent grassland, and Ecological Focus Areas (EFA) on both arable and permanent crop land. The creation of EFAs, extending to seven per cent of the eligible area of arable and permanent crops, has been recognised as having the greatest potential to address a range of environmental concerns in the farmed countryside (Allen *et al*, 2012).

The relationship between the proposed greening requirements in Pillar 1 and the design of Rural Development Programmes (RDPs) in Pillar 2 will require careful attention to secure the most efficient use of both sources of funding to deliver environmental priorities. This interrelationship is considered in the principles for designing EAFRD schemes in Section 3.

### **1.1.3 Forests and other wooded land**

It is worth remembering that the EAFRD has a much broader land management scope than just agriculture. Around 43 per cent of the EU total land area is occupied by forests and other wooded areas, much the same proportion as is used for agriculture, yet agricultural land management and farm businesses remain the main focus of EAFRD expenditure in many of the current RDPs and dominate the CAP reform debate, despite the equally significant role of wooded land in delivering environmental benefits. The flexibility in the draft legislation offers farmers and foresters new opportunities to combine agricultural and forestry management for a more integrated environmental delivery and also highlights the role of forestry measures in supporting the shift towards a low carbon and climate resilient economy (COM(2011)627/3 Annex V).

---

<sup>3</sup> As proposed under COM(2011)625/3, Art. 29-33

## 2 ENVIRONMENTAL PRIORITIES FOR THE 2014-2020 RURAL DEVELOPMENT PROGRAMMES



The key EU targets and objectives to be addressed by EAFRD and the other CSF funds<sup>4</sup> include:

- the *Water Framework Directive* (Directive 2000/60/EC), that obliges Member States to ensure the good ecological status of water bodies, which includes their chemical ecological and quantitative condition;
- the *Floods Directive* (Directive 2007/60/EC) and the *Nitrates Directive* (Directive 91/676/EEC);
- the EU's *Biodiversity Strategy* (COM(2010) 244 final) with the goal of halting the loss of biodiversity and the degradation of ecosystem services by 2020, and restoring them as far as is feasible;
- the *Birds and Habitats Directives* (Directives 2009/147/EC and 92/43/EEC, respectively) that form the cornerstone of the EU's nature protection policy;
- the *Soil Thematic Strategy* (COM(2006) 231) and the proposed *Soil Framework Directive* (COM(2006) 232 final), aimed at the protection and sustainable use of soil resources; and
- the White Paper *Adapting to climate change: Towards a European framework for action* (COM(2009) 147 final), which sets out the EU framework for adaptation to climate change, including objectives and actions.

More specifically, the CSF expects the EAFRD to play a crucial role in delivering the aims of the EU's Biodiversity Strategy by providing environmental public goods through agriculture and forestry, particularly targeting collective approaches to the provision of environmental public goods; green infrastructure; High Nature Value (HNV) farming systems; and sustainable farming practices in protected sites that help to preserve, enhance and restore biodiversity and related ecosystem services. The CSF identifies key actions for EAFRD, including support for production techniques that enhance the buffer and filter functions of soils (thus also improving water quality) and promoting management practices that improve

---

<sup>4</sup> COM(2011) 615 final/2 Elements for a Common Strategic Framework 2014 to 2020: the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund, the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund; and SEC(2011) 1141 final; and SEC(2011) 1142 final. Also COM(2011) 615 final/2.



the organic matter content of soils, thereby enhancing soil biodiversity. Annex 1 of this report lists the CSF key actions relevant to the EAFRD measures discussed later in this document.

Taking into account the relevant CSF priorities, and the six priorities set out in the EAFRD regulation, the following have been identified as priority outcomes to guide the use of the EAFRD in supporting the provision of environmental public goods:

**Priority outcomes for biodiversity:**

- favourable conservation status is achieved and maintained for semi-natural habitats and threatened species<sup>5</sup> dependant on, or negatively affected by, agriculture and forestry management;
- biodiversity benefits of existing HNV farming and forestry are maintained, and HNV management reinstated where recently abandoned;
- unfarmed features, such as hedges, fallow areas, patches of scrub, trees, ditches and ponds, and fire breaks in forests are managed for benefit of wildlife and to improve connectivity of habitats;
- diversity and connectivity of farmland and forest habitats is maintained and improved at the wider landscape scale; and
- resilience of farmland and forest ecosystems to climate change is improved, including promoting genetic diversity of crops and livestock.

**Priority outcomes for water:**

- improved hydrological and biological conservation status of wetlands, rivers and aquifers, through reduced water abstraction and more efficient storage and re-use of water in agriculture;
- diffuse pollution of surface and ground waters by nitrates, phosphates and Plant Protection Products (PPPs) as a result of agricultural and forest management is reduced to a level that allows WFD objectives to be met;
- efficiency of use of fertilisers and PPPs in agricultural and forestry is improved; and
- water flows on or across agricultural and forest land are managed to reduce environmental risks downstream.

**Priority outcomes for soils:**

- risks of soil erosion by wind and water are reduced;
- organic matter content of mineral soils is improved;
- wet organic soils are maintained in good hydrological and biological condition; and
- soil functionality and soil capacity to provide ecosystem services are protected from damage by agricultural and forestry operations.

**Priority outcomes for climate change mitigation:**

- carbon sequestration and storage capacity of agricultural and forest land is improved;
- important carbon stores in vegetation and soils are protected (for example, in semi-natural grasslands and forest soils);
- emissions of carbon, nitrous oxides and methane from agricultural and forestry land management are reduced in total, particularly carbon emissions from previously drained peat soils; and
- efficiency of fuel use in agriculture and forestry is improved and reliance on fossil fuels reduced.

---

<sup>5</sup> In particular, those reported in Annex 1 to the Birds Directive and Annex 2 to the Habitats Directive

### 3 KEY PRINCIPLES TO GUIDE THE DEVELOPMENT AND IMPLEMENTATION OF THE 2014 – 2020 RURAL DEVELOPMENT PROGRAMMES



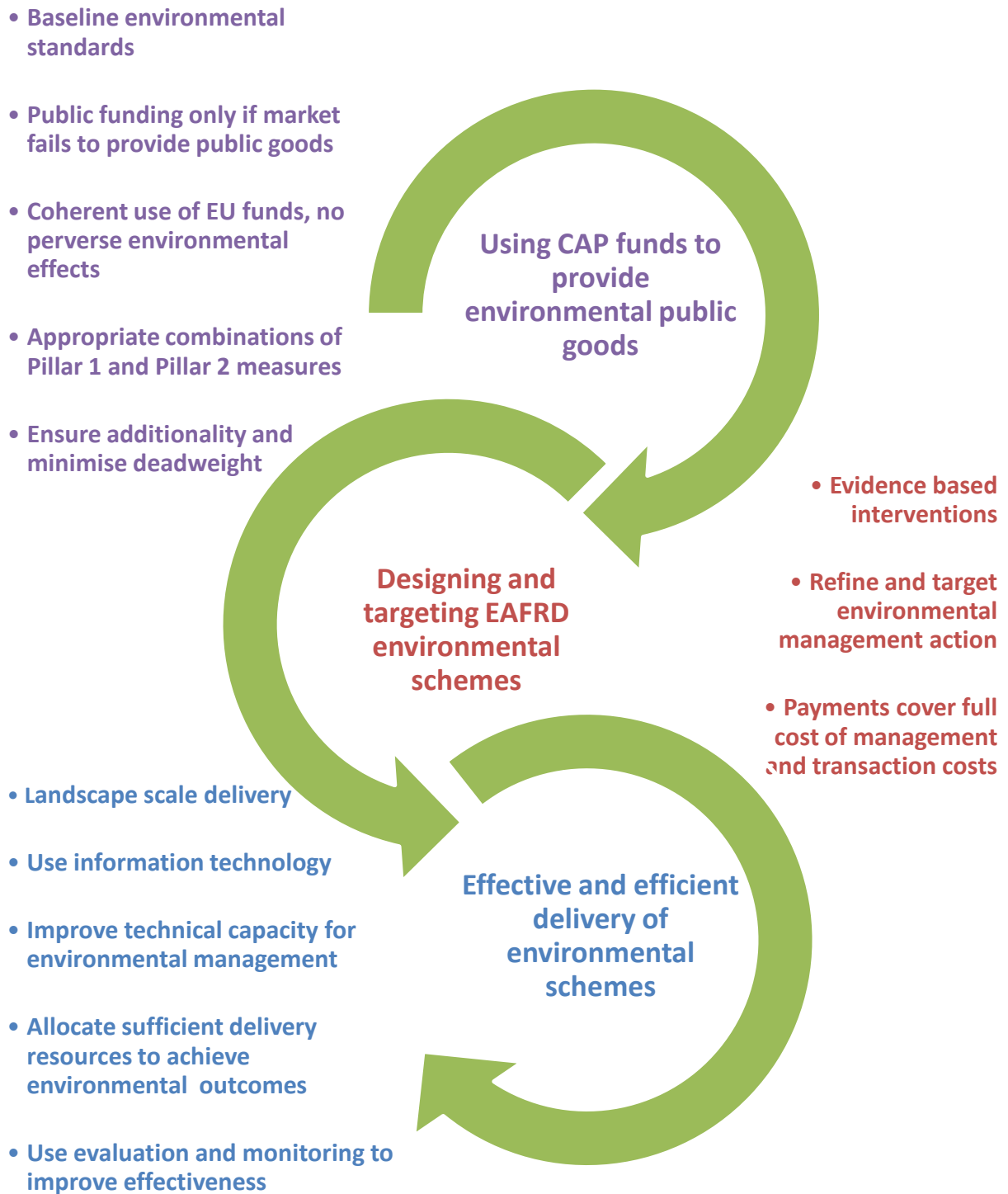
This section sets out a series of integrated principles to guide the use of EAFRD funding and the development and implementation of the 2014-2020 RDPs to deliver the priority environmental outcomes described above.

There are thirteen key principles, some of which apply to different stages of the RDP process, but it must be emphasised that ***all are relevant to every RDP, irrespective of its objectives, and that these principles are designed to be followed in an integrated way.***

The principles are summarised in Figure 1 and described below in three groups:

- using EAFRD and related CAP funds to support the provision of environmental public goods from farm and forest land;
- designing and targeting EAFRD schemes to achieve environmental objectives; and
- delivering EAFRD environmental schemes effectively and efficiently.

**Figure 1: Key principles to guide EAFRD support for the provision of environmental public goods**



### **3.1 Principles for use of CAP funds to support the provision of environmental public goods from farm and forest land**

#### ***Define baseline environmental standards of land management, for both agriculture and forestry.***

EAFRD land management payments can cover only those activities that go beyond baseline standards of environmental land management. These standards are a mixture of environmental regulations that apply to all land managers whether or not they benefit from CAP payments, and conditions attached to specific CAP and EAFRD measures, with considerable overlap between the two groups. It is important that these standards are clearly defined because they form the baseline for the calculation of all area-based RDP payment rates. Anything required by these baseline standards cannot be paid for by EAFRD.

At present this baseline for farmland consists of cross-compliance<sup>6</sup> and other standards that comprise:

- the cross-compliance Statutory Management Requirements (SMR), for example elements of the Habitats or Birds Directives relating to Natura 2000 habitats and species;
- the cross-compliance standards of Good Agricultural and Environmental Condition (GAEC) defined by Member States within a common EU framework;
- other national or regional regulations that apply at farm level, including any farm-level requirements for maintenance of permanent pasture under cross-compliance rules; and
- for recipients of agri-environment payments, requirements on the use of fertilisers and plant protection products defined by Member States.

Member States have defined GAEC and other standards in ways that reflect their different national and regional circumstances and priorities which means that the baseline differs not just across the EU, but also between regions, although the need to reflect the EU legal framework for GAEC cross-compliance standards does limit these differences to a certain extent.

The baseline for area-based EAFRD farmland support will have an additional element for the 2014-20 programmes if the greening element<sup>7</sup> is added as a condition of Pillar 1 direct payments. The framework of GAEC standards has also been revised.

For forest managers there is no equivalent EU-wide framework of SMR and GAEC standards. The draft legislation proposes that for 2014-2020 RDPs the mandatory requirements in national forestry acts or other relevant legislation should be used as the baseline for payment calculations for the forest-environmental and climate and forest conservation measures.

---

<sup>6</sup> As defined for the 2007-13 RDPs in Art.5 and Annex II and Art.6 and Annex III of Council Regulation EC 73/2009, and as revised for 2014-2020 in the legislative proposals in Art.91 - 95 and Annex II of COM(2011) 628/3.

<sup>7</sup> For retention of permanent pasture, crop diversification and a minimum percentage of the cultivated land on the farm to be managed for wildlife and landscape as 'ecological focus areas', as defined in Art. 29 -33 of COM(2011)625/3.

***Use public funds to supply environmental public goods only where there is market failure***

‘Public goods’ is a well established concept in economic theory which has been translated into agriculture and forestry (see for example Cooper et al, 2009). Public goods have two defining characteristics, in that they are:

- non-excludable: if the good is available to one person, others cannot be excluded from the benefits it confers; and
- non-rival: if the good is consumed by one person it does not reduce the amount available to others.

In contrast, private goods are supplied through markets where if there is a decline in supply or an increase in demand, the price tends to rise, and if demand declines or supply increases, prices tend to drop. Most agricultural and forestry products (for example meat, milk, wheat, timber, cork) are private goods traded on global markets. Agricultural and forestry production of private goods may incidentally produce some public goods (for example rural landscapes), which do not require any deliberate action to ensure their delivery. However, many environmental public goods depend on appropriate land management practices that may not be the most profitable in a given area, or may even operate at a financial loss. Farmers and foresters have little economic incentive to provide such goods. For example upland dairy farms may produce milk from species-rich hay meadows, but if the business needs to increase productivity in response to market pressures the rational choice may be to convert to silage produced from more intensively managed grassland, with significant loss of biodiversity and water public goods. Therefore, providing support that incentivises existing farming systems to continue to maintain species-rich grassland would be justified, from a public goods perspective.

***Ensure coherent use of CAP and other EU and national funds, with no perverse environmental effects***

Farmers providing environmental public goods are very likely to be beneficiaries not just of EAFRD support but also Pillar 1 income support and ‘greening’ payments as well as other EU or national support, for example for renewable energy generation. It is essential that the synergies between these support streams are fully realised and that the *combined* effect of this mix of support (which may include training and advice, not just funding) does not lead to environmental harm. At the programme level this would require not just coherence with other funding streams (such as ESF and ERDF) but also coherence within the RDP where ‘environment proofing’ of all measures would ensure that there are no perverse effects (for example by ensuring that investment support to improve the economic viability of an HNV farm does not lead directly or indirectly to biodiversity loss).

***Choose appropriate combinations of Pillar 1 and Pillar 2 measures to achieve specific environmental objectives***

The two pillars of the CAP have different purposes but it is important that potential synergies between them are used to environmental benefit at farm level. This principle aims to achieve ‘added environmental value’ by combining different policy tools to deliver environmental public goods efficiently and effectively. For example, advice on the environmental and agricultural benefits of unfarmed features could be provided by the

Farm Advisory System (FAS)<sup>8</sup>, and training<sup>9</sup> in the management of semi-natural habitats and key species could be a requirement of agri-environment-climate contracts.

Some extensive farming systems at risk of major change are already delivering high levels of environmental public goods, but will need an integrated package of targeted support from both Pillars of the CAP to ensure both their economic and environmental future. For example existing HNV grassland could be protected from abandonment or conversion, through an 'HNV friendly' package of Pillar 1 and 2 measures aimed at supporting extensive livestock farming, improving the market for HNV products, maintaining habitats and farmland features and improving the livelihoods of HNV farm families and communities (Keenleyside and Baldock 2007, Keenleyside and Oppermann, 2009). The new thematic approach to EAFRD, and the emphasis on innovation makes it easier to design such a package, which could include:

- Pillar 1 GAEC standards and 'greening' payments differentiated to take account of the characteristics of HNV farming systems, and specific environmental support under the proposed Article 38<sup>10</sup> for extensive livestock farming; and
- an integrated package of EAFRD support using the measures for HNV management plans, agri-environment-climate, training, agro-forestry, non-productive investment, processing, marketing, tourism and support for small businesses, facilitated by co-operation, innovation and LEADER.

#### ***Ensure additionality and minimise deadweight***

The principle of additionality refers to the link between public financial support for an activity and the extent to which the activity would have happened in the absence of such support.

In this case the activity is the provision of environmental public goods arising from the decisions of individual farmers, foresters and other beneficiaries of CAP funds. If the outcome "would have happened anyway" in the absence of CAP support, it could be argued that there is no additionality, but the judgement requires an assessment of how other factors are driving change in the *status quo*. For example, if low-input livestock production is delivering high levels of environmental public goods but market returns are insufficient, there will be strong pressure for either intensification or abandonment, both leading to the loss of public goods. In this case little change may be required in land management, but additionality is achieved if CAP funding ensures that the land continues to be managed to provide at least the current level of public goods.

Deadweight is related to additionality and may occur when EAFRD payments and requirements are standardised for reasons of administrative simplicity, for example where there are large numbers of beneficiaries and some would have been prepared to accept levels of payment lower than the standard offered. Applying the principles of differentiating and targeting interventions based on sound evidence is an effective way of reducing deadweight (see section 3.2 below).

---

<sup>8</sup> Art.12-15 COM(2011) 628/3.

<sup>9</sup> Supported under Art.16 of COM(2011) 627/3

<sup>10</sup> COM(2011) 625/3

### **3.2 Principles for designing and targeting EAFRD national, regional or local schemes to meet environmental objectives and support provision of environmental public goods**

#### ***Ensure that Interventions are evidence based and aimed at specific, clearly defined environmental objectives***

In the legislation the purpose and scope of EAFRD measures to support environmental land management, investment and capacity building is usually defined quite broadly, leaving Member States the necessary flexibility to tailor support to their own circumstances. For some measures the environmental outcome may be described, but the RDP payment is based on *prescribed land management interventions* or investments at the level of individual farm, forest or business. It is essential that these prescribed interventions are based not just on perceived need but also on evidence that the chosen intervention has proved to be successful in achieving the desired outcome. This evidence may be in the form of academic research, field trials, pilot projects or evaluation studies of earlier RDP implementation<sup>11</sup>.

An example of evidence-based interventions can be seen in England through the South West Farmland Bird Initiative (SWFBI). This initiative designed and implemented a package of in-field land management options aimed at the conservation of farmland birds. The selection of land management options within this package was based on research and evidence of effective ways of targeting the needs of declining farmland bird populations in the South West of England. The research highlighted that farmland birds require a combination of resources, particularly food sources over winter and spring and in-field nesting sites. Consequently, to ensure an appropriate uptake of Environmental Stewardship options, the SWFBI designed a package of options funded by the Higher-level Stewardship agri-environment scheme that could deliver optimum benefits for farmland bird species.

A key outcome of this initiative is the increased uptake of in-field options since 2005 levels. By 2010, in-field farmland bird options were delivered on 3,847 hectares of farmland, notably resulting in the breeding of five pairs of corn buntings (*Miliaria calandra*) where they had previously not bred. Although numerous farmland bird species have been observed in these areas, it is only recently that this monitoring is being tracked alongside the national farmland bird index to help understand what impact is being made and add to the evidence base.

#### ***Refine and target EAFRD environmental land management actions to be more effective at farm level***

Rather than taking a 'one size fits all' approach, there are several ways of refining the design and targeting of land management schemes such as agri-environment-climate, forest-environment, Natura 2000, afforestation, forest restoration and non-productive investments to meet differing environmental, agricultural or silvicultural needs. For example, this can include setting different payment rates for defined geographical areas, limiting eligibility to certain priority zones or farm types, or having several versions of prescribed management actions, such as harvesting dates, suited to different soil and climatic conditions.

---

<sup>11</sup> See for example <http://www.eln-fab.eu/>  
<http://www.environmentalevidencejournal.org/content/pdf/2047-2382-1-4.pdf>  
<http://www.conservationevidence.com/>

***Take into account the full cost of the management actions and the farmers' and foresters' transaction costs when calculating payment rates.***

Where agricultural or forest land delivering environmental public goods is at risk of abandonment, this is often because the farming or silvicultural system is uneconomic, particularly on marginal land. With no income to forgo, the full cost of farming the land, including labour, buildings and other fixed costs should be counted as 'additional costs' in the agri-environment calculation. This could be applied to HNV land on the basis of individual parcels of land or whole farms (Barnes *et al*, 2011).

The current EAFRD allows an additional 20 per cent of agri-environment payment calculations to cover farmers' transaction costs but this is rarely used by Member States, despite a demonstrable need (Keenleyside *et al*, 2011). The draft Regulation continues to offer 20 per cent transaction costs, raised to 30 per cent for group applications and it also extends the 20 per cent option to forest-environment payments. Transaction costs should be used to address the needs of particular groups of target beneficiaries who may find the process of application difficult (for example graziers of common land, farmers without internet access and small forest owners).

### **3.3 Principles for effective and efficient delivery of EAFRD environmental schemes**

***Use wider landscape scale delivery where necessary***

It is necessary to deliver many environmental public goods at a scale wider than that of an individual land holding, often referred to as the wider 'landscape scale'. For example this may be to improve water quality (catchment scale), resilience of biodiversity to climate change (wildlife corridors connecting patches of habitat), or carbon storage (hydrological systems of blanket bogs and lowland fens). In these cases EAFRD interventions may be required on contiguous land holdings or a network of holdings in multiple ownerships. Following the design principle of differentiated and targeted schemes will help but may not always be sufficient to achieve the 'critical mass' of uptake required. In these cases measures that support landscape scale delivery may be very cost-effective, for example co-operation (Art. 36), or group participation facilitated through the transaction costs mechanism (Art. 29 and 30). For some groups of farmers and foresters advice and facilitation may be provided most effectively by non-government organisations, such as producer groups or environmental NGOs, funded through Art. 15 or LEADER.

The Strathspey Wetlands and Waders Initiative in Scotland is a good example of how choosing an appropriate scale of delivery can greatly improve environmental delivery. The project relies on support from several measures within the 2007-13 RDP, including agri-environment payments under the Rural Priorities scheme (214) and training workshops under the Skills Development Scheme (111). The project sought to address the 42 per cent decline in breeding wader populations seen between 2000 and 2010, by encouraging the provision of high quality breeding wader habitat at a landscape scale through targeted Rural Priorities funding applications; a coordinated response to land management in the area was ensured by providing coordinated advice to land managers.

Currently the project has secured over 45 Rural Priorities agreements, covering 2,250 hectares. Adopting a landscape scale approach in this instance facilitated the purchase of communal rush cutting equipment for the project area. This equipment was too expensive for land managers to purchase individually but was important for the upkeep of wader habitat.



***Allocate sufficient budget resources to scheme delivery to achieve effective uptake and implementation and to achieve environmental outcomes***

On the ground advice and support for farmers and foresters choosing and implementing EAFRD land management measures requires staff with both technical knowledge and the ability to gain the respect of the land managers. This support goes beyond the provision of initial advice to include support for beneficiaries during the life of the contract and advice on remedial action in cases of poor compliance. This is resource intensive but can improve both environmental outcomes in the longer-term and the cost-effectiveness of environmental land management incentive payments.

One example of how advice plays an important role in environmental delivery across the EU-27 can be seen in Scotland where NGOs have taken an active role in providing advice to land managers when drawing up their applications for support under the Rural Priorities initiative. In some places this advice has become embedded in the application process for those entering new schemes and is expected to lead to improved environmental outcomes. Furthermore, assessment processes draw on a range of specialist expertise, through the Case Officers and Regional Proposal Assessment Committees, in order to make informed judgements about the quality and local suitability of applications.

***Use information technology to improve EAFRD cost-effectiveness***

In the design and targeting of land based interventions available and emerging technologies can offer cost-effective solutions, for example by integrating environmental resource information with the CAP Land Parcel Information System<sup>12</sup> (LPIS) and making use of GPS at the field scale.

Technology can be used for the targeted delivery of certain agri-environment schemes. For example, the conservation of HNV grasslands in Bulgaria relies on LPIS to determine which land is eligible. This technical support is identified as a key factor in the delivery of biodiversity conservation aims. Another example of technology being used to enhance environmental delivery is in the Czech Republic where LPIS has been used to map sensitive soils targeted by an agri-environment scheme to reduce soil erosion.

***Ensure that delivery agencies, farmers and foresters have the necessary technical capacity for environmental management***

The best-designed environmental schemes may fail if the delivery agencies lack the technical capacity to make environmental judgements, for example about where to target land management requirements, farmers' compliance and evaluation of the environmental outcomes. This may require retraining of agricultural and forestry delivery staff. Equally damaging can be a lack of understanding on the part of farmers and foresters about the environmental objectives of the intervention and the details of what is required of them. Formal advice and training under Art. 15 (possibly as a condition of agri-environment or forest environment schemes) can address this, together with effective farmer support networks.

An example of training and support for land management activities can be seen in Estonia where training, currently funded under Axis 1, is a condition of entry into an agri-environment contract. Improving the farmers' understanding of their roles in meeting different environmental challenges is expected to improve their delivery of environmental priorities and possibly lead to 'added-value' delivery beyond the requirements set out in the agri-environment scheme.

There are also examples of how a lack of advice and farmer support can hinder uptake and implementation of

<sup>12</sup> For details see <http://ies.jrc.ec.europa.eu/our-activities/support-for-member-states/lpis-iacs.html>

a package or scheme. For example, in Catalonia, Spain, an integrated approach to rural development measures, the Farm Global Contract, has been designed to facilitate applications for both farmers and administrative bodies. However the approach is poorly understood by farmers, which has resulted in limited uptake.

***Set up and use evaluation and monitoring systems to improve effectiveness***

Within the EAFRD Common Monitoring and Evaluation Framework the environmental impact indicators are important, but not all have been implemented successfully during the current programme (for example that for HNV farmland). In addition to the CMEF reporting there are other ways of improving the effectiveness of interventions during the design process and throughout the course of the programme. For example, involving farmers in scheme design and review processes can improve capacity building, understanding and uptake, while providing beneficiaries with feedback on the environmental impacts of their management can reinforce this process. Small-scale pilot testing and evaluation of schemes could improve environmental cost-effectiveness, acceptance and delivery, especially where schemes are being introduced for the first time. 'Fast track' internal review processes during the first two years of a scheme provide an effective way of identifying and resolving problems before these can affect implementation or environmental effectiveness.

Farmers in Lombardia, Italy, were invited to help to design an agri-environment scheme, alongside experts and regional officers, addressing the negative impact of the dry period in rice cultivation on herons (*Ardea sp.*). Despite the slightly demanding management requirements, such as creating water courses and ditches, this participatory approach resulted in a high regional uptake of the scheme with 11,300 ha (of a total 100,000 ha) in the first year: in one province, Mantova, there was 100 per cent up take (Keenleyside *et al*, 2011).

## 4 DELIVERING ENVIRONMENTAL PRIORITIES USING EAFRD FUNDING



### 4.1 Relationship between EAFRD measures and environmental priorities

There are 30 different measures<sup>13</sup> in the proposed EAFRD regulation that can be used to help in the achievement of one or more EU priorities. Of these, 21<sup>14</sup> have particular relevance to the environmental priorities identified in Section 2. These measures comprise a significantly longer list than the eight listed in Annex V of the draft regulation as *relevant to restoring, preserving and enhancing ecosystems dependent on agriculture and forestry and promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors*. Based on a review of similar measures under the 2007-2013 RDPs<sup>15</sup> and expert judgement, this document makes the case for the potential of other measures to contribute to these aims, either individually or as part of a coherent package of integrated measures targeted at particular environmental priorities.

Some measures will be **key** to delivering certain environmental priorities, some will play a more **supporting** role and others will provide **cross cutting** support across all objectives. Table 1 helps to demonstrate the multi-objective nature of each measure. It identifies whether the measure is key to a priority or supporting and how, if implemented effectively, it can be used to deliver multiple environmental priorities.

It is also important to understand how these measures are implemented. For example measures can be used to provide advice, financial incentives for management operations, or investment aid. In order to make clear how these measures can support the delivery of environmental priorities, they have been classified into four distinct types:

- incentive payments for specific **land management** operations or compensation for management restrictions;
- direct **investments** in agricultural, forestry or environmental infrastructure;
- **adding value** to environmentally sustainable produce; and
- **capacity** building amongst farmers, foresters and other stakeholders.

---

<sup>13</sup> Articles 15 through 45

<sup>14</sup> Considering the Leader Articles (42 – 45) as one Article

<sup>15</sup> For example Keenleyside et al, 2011 and Poláková et al, 2011

**Table 1: Overview of EAFRD measures and their potential to deliver environmental priorities**

Article No.	Measure Name	Biodiversity	Water	Soil	Climate Change	Type of support
Article 15	Knowledge transfer and information actions	<----->				capacity
Article 16	Advisory services, farm management and farm relief services	<----->				capacity
Article 17	Quality schemes for agricultural products and foodstuffs	S	S	S	S	added value
Article 18	Investments in physical assets	K	K	K	K	investment
Article 20	Farm and business development	<----->				investment / added value
Article 21	Basic services and village renewal in rural areas	K	K	K	K	investment
Article 23	Afforestation and creation of woodland	S	K	K	K	land
Article 24	Establishment of agro-forestry systems	K	K	K	K	land
Article 25	Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events	S	K	K	K	land
Article 26	Investments improving the resilience and environmental value of forest ecosystems	K	K	K	K	land
Article 27	Investments in new forestry technologies and in processing and marketing of forest products	S	S	S	S	investment / added value
Article 28	Setting up of producer groups	<----->				capacity
Article 29	Agri-environment- climate	K	K	K	K	land
Article 30	Organic farming	S	S	S	S	land
Article 31	Natura 2000 and Water framework directive payments	K	K	S	S	land
Article 32	Payments to areas facing natural or other specific constraints	S	S	S	S	land
Article 33	Designation of areas facing natural and other specific constraints	S	S	S	S	
Article 35	Forest-environmental and climate services and forest conservation	K	K	K	K	land
Article 36	Co-operation	<----->				capacity
Articles 42-45	LEADER	<----->				capacity
Article 61	European Innovation Partnership	<----->				capacity

**Key to Table 1**

K	Key measures that have the potential to support the delivery of certain environmental priorities
S	Measures that have the potential to support the delivery of certain environmental priorities
<----->	Cross cutting measures with the potential to play a role in delivering all environmental priorities

## 4.2 Delivering multiple environmental priorities

All of the 21 measures listed in Table 1 have at least some potential to support the delivery of each of the environmental priorities set out in Section 3. Some measures are relevant to the delivery of all priorities, whereas others are key to delivering certain priorities but play only a supporting role in others. For example the *forest-environmental and climate services and forest conservation* measure (Article 35) is key to the delivery of all priorities (biodiversity, water, soil and climate mitigation). However, the *afforestation and creation of woodland* measure (Article 23) is key to delivering only certain soil and climate change mitigation priorities and plays only a supporting role in delivering biodiversity and water priorities. Seven measures are cross cutting.

It should be noted that Table 1 only sets out the potential of the different measures. How these measures are interpreted and designed in RDPs and how and where they are targeted will determine if this potential is realised in practice. Using the principles outlined in Section 3 is essential to this process. It is essential that efforts to achieve one priority do not undermine, directly or indirectly, those aimed at achieving another (see Section 3.1) and some tensions can be expected in meeting multiple priorities.

Despite the multi-objectivity of many of the measures, it may be necessary in some situations to use combinations of measures to deliver a range of environmental priorities. For example the agri-environment climate measure (Article 29) may be targeted towards biodiversity management, with the establishment of agro-forestry systems (Article 24) used to deliver soil and climate change mitigation priorities, both supported through investments in physical assets (Article 18) and advice and training (Articles 15 and 16). With the removal of the four-axis structure, the proposed EAFRD has much greater flexibility for using different combinations of measures to improve environmental delivery and provides managing authorities with new opportunities to offer land managers packages of measures most appropriate to their situation.

Given this inherent multi-objectivity within and between the different measures, and the potential to combine measures in different ways, it is important to consider: how RDPs can be designed to deliver the most for the environment; and also how greater administrative and financial efficiencies can be achieved through the effective use of carefully designed multi-measure and multi-objective approaches. The principles set out in Section 3 have been developed to help guide this design process and ensure that potential for delivering multiple objectives is realised.

The following section (4.3) focusses on the individual measures and sets out, priority by priority, the environmental outcomes and the key and supporting measures; this is followed by a brief description of each measure and a discussion of the opportunities it offers to deliver environmental priorities, showing how the application of the key principles can help to avoid any environmental risks associated with the use of the measure. Further examples of measure combinations can be found in Table 2 in Annex 2.

To avoid repetition the measures are described where they first appear in the text, largely in the biodiversity section with subsequent sections focussing on the opportunities and risks specific to the other priorities. For all four priorities the agri-environment-climate and forest-environment-climate measures are described first, as these are the two most important measures supporting all environmental priorities. The remaining measures are then set out in number order, as key or supporting measures.

### 4.3 Key EAFRD measures to deliver environmental priorities

#### BIODIVERSITY



#### Priority environmental outcomes for biodiversity

- favourable conservation status is achieved and maintained for semi-natural habitats and threatened species<sup>16</sup> dependant on, or negatively affected by, agriculture and forestry management;
- biodiversity benefits of existing HNV farming and forestry are maintained, and HNV management reinstated where recently abandoned;
- unfarmed features, such as hedges, fallow areas, patches of scrub, trees, ditches and ponds, and fire breaks in forests are managed for benefit of wildlife and to improve connectivity of habitats;
- diversity and connectivity of farmland and forest habitats is maintained and improved at the wider landscape scale; and
- resilience of farmland and forest ecosystems to climate change is improved, including promoting genetic diversity of crops and livestock.

#### EAFRD measures to deliver biodiversity priorities

- Agri-environment-climate (Art. 29)
  - Forest-environmental and climate services and forest conservation (Art. 35)
  - Investments in physical assets (non-productive investments (Art. 18(1)(d))
  - Basic services and village renewal in rural areas (Art. 21)
  - Establishment of agro-forestry systems (Art. 24)
  - Investments improving the resilience and environmental value of forest ecosystems (Art. 26)
  - Natura 2000 and Water Framework Directive payments (Art. 31)
- Key measures**
- Quality schemes for agricultural products and foodstuffs (Art. 17)
  - Afforestation and creation of woodland (Art. 23)
  - Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)
  - Investments in new forest technologies and in processing and marketing of forest products (Art. 27)
  - Organic (Art. 30)
  - Payments to and designation of areas facing natural or other specific constraints (Art. 32 and Art. 33)
- Supporting measures**

<sup>16</sup> In particular, those reported in Annex 1 to the Birds Directive and Annex 2 to the Habitats Directive

#### 4.3.1 Key EAFRD measures for biodiversity

##### Agri-environment-climate (Art. 29)

##### Key measure

###### *Measure description*

This measure remains the only compulsory element of every RDP and, together with the equivalent measure for forests Article 35 and the non-productive investment measure Article 18, has the potential to support almost any type of environmental land management to deliver environmental priorities on farmed and forested land. This can range from highly targeted interventions tailored to the needs of a particular area or species, to more widespread interventions aimed at all arable farmland, for example.

The addition of climate to the agri-environment measure is a significant change, signalling a commitment to support for agricultural and forestry management practices contributing towards climate change adaptation and mitigation, which may become even more significant if the EU adopts rules for accounting for emissions from land use, land use change and forestry<sup>17</sup>. Other changes include a new emphasis on group applications from farmers and other land managers, accompanied by more generous transaction costs of 30 per cent, which will help to facilitate landscape scale interventions provided that Member States use these. Many managing authorities do not currently add transaction costs for agri-environment payment calculations, despite evidence that this can affect uptake (Keenleyside et al 2011). Setting up new group environmental projects could be supported by Article 36 (see Section 4.4 below) and examples of the effective use of cooperative approaches and group applications to agri-environment schemes can already be seen in the Netherlands (Franks and McGloin 2006).

Land managers who are not primarily farmers, such as retired people or private nature conservation bodies, own significant areas of land important for biodiversity. It is therefore worth pointing out that agri-environment climate support can be paid not just to farmers but also other land managers *where duly justified to achieve environmental objectives*. In the design of RDPs care should be taken to ensure that support is available to those individuals best placed to carry out the environmental management necessary to deliver environmental priorities.

Another change to this measure, with the potential to improve environmental outcomes, is the exhortation that Member States shall *endeavour to provide persons undertaking to carry out operations under this measure with the knowledge and information required to implement them, including by commitment-related expert advice and/or by making support under this measure conditional to relevant training*. Many of the actions that can be supported under this measure are complex and require a good understanding of the desired outcomes and how they can be achieved. This could be supported by the use of Art 15 and 16. Examples from the 2007-13 programming period have shown that the delivery of environmental benefits through agri-environment schemes is improved where it is combined with advice and training (Keenleyside et al, 2011).

---

<sup>17</sup> In March 2012, the European Commission proposed establishing common EU accounting rules for greenhouse gas emissions and removals in the forest and agriculture sectors, the last major sectors without common EU-wide rules. The proposal represents a first step towards incorporating emissions and removals resulting from activities related to land use, land use change and forestry (LULUCF) into EU climate policy.

The inclusion of greening payments in Pillar 1 effectively raises the baseline for agri-environment payments, because some management currently incentivised by agri-environment payments, for example crop rotations and buffer strips, is likely to be a requirement of Pillar 1 greening payments for most, but not all, farmers. This offers the opportunity to build on the raised baseline for EAFRD land management payments, making more effective use of funds allocated to the agri-environment-climate measure. However, this will require careful presentation and differentiation of payments and management requirements to encourage farmers to take up the agri-environment-climate options.

### *Opportunities*

Opportunities to support biodiversity using the agri-environment climate measure are very broad. There are two distinct roles: first to improve current levels of environmental management; and second to maintain environmentally appropriate land management where it already exists but is threatened by external factors (for example HNV farming at risk of abandonment). Interventions may be targeted at grassland and other forage areas, for example heathlands, salt marshes, wood pastures, as well as arable land and permanent crops. Schemes can be tailored to local conditions and may include, for example habitat and species management, reductions in fertiliser and plant protection products and changes to harvesting techniques and dates, and grazing regimes. At a landscape scale group applications could support the restoration and buffering of semi-natural habitats making them more resilient to climate induced stress; and creating effective networks of ecological corridors such as field margins, semi-natural habitat patches and hedgerows to increase connectivity throughout agricultural landscapes allowing species to move and migrate.

### *Avoiding risks*

There are several risks to biodiversity in using this measure. Where 'entry-level' or less-demanding agri-environment-climate schemes are used to achieve broad coverage, there is a risk of deadweight and loss of additionality. This can be minimised through the effective use of targeting and differentiation of management requirements in specific areas or towards specific habitats and species. Where specific habitat or species management is the objective, it is essential that the intervention is based on sound evidence and that it is targeted at the appropriate land. This can be helped by farmer advice and training but may also require allocation of additional resources to the delivery process, especially where farmers are unfamiliar with the biodiversity objectives. A further risk, particularly to semi-natural grasslands (where existing livestock systems may be uneconomic) will come from the pressure to meet climate change objectives, for example by growing energy crops or short-rotation coppice, or afforesting this land. In this example care should be taken to ensure that this measure is used to support the delivery of environmental public goods where these are threatened thus providing environmental additionality whilst also ensuring no perverse environmental effects. This may include targeting actions to deliver carbon sequestration through the maintenance of semi-natural habitats, the re-wetting of peatland areas, or the adaptation of wildlife to climate change through improving the resilience of ecosystems and connectivity of habitats.



A good example showing the success of agri-environment targeting and species recovery can be seen in East County Down in Northern Ireland. In 2006 the Yellowhammer Recovery Project was set up as a five year trial management project funded through the agri-environment measure (214). The project had two objectives; to see if seed-eating birds were benefiting from the specific arable land management options created for the project; and to see if advice and a good uptake of these options would result in a farm-scale increase of yellowhammer and other priority farmland bird species. Farmers involved in the project had to undertake a number of arable land management options including specific management that was beyond the requirements of the current agri-environment scheme.

The results showed that yellowhammer (*Emberiza citrinella*) increased by 79 per cent on farms taking part in the project and added new options to their agreements. In the control non-participating farms Yellowhammer numbers also increased but to a lesser degree (20 per cent) demonstrating the effectiveness of targeting of the agri-environment to specific priority outcomes.

## Forest-environmental and climate services and forest conservation (Art. 35)

### Key measure

#### *Measure description*

Despite its potential to provide targeted support through annual payments for the continuation or introduction of sympathetic silvicultural management for environmental purposes, the measure for multi-annual forest-environment management payments has been one of the least used in current RDPs. Part of the problem has been the absence of an EU-defined baseline for these payments, comparable to the GAEC cross-compliance standards for farmland. The revised article now defines the baseline nationally, as *the relevant mandatory requirements established by the national forestry act or other relevant legislation*, and requires the submission of a plan for sustainable forest management as a condition of support for all but the smallest forests. A further improvement is the inclusion of transaction costs in the payment calculation (at 20 per cent).

#### *Opportunities*

Opportunities to support forest biodiversity using this measure are very broad, especially to protect current management in existing HNV forests where there is pressure to intensify production or, accompanied by non-productive investments under paragraph 1(d) of Article 18, to improve the conservation status of under-managed HNV forests by reintroducing beneficial management. There are also opportunities to deliver biodiversity benefits by reducing the intensity of silvicultural management in productive forests, for example by managing fire breaks and creating clearings for the benefit of butterflies and other invertebrates.

#### *Avoiding risks*

The main risk to the use of this measure is the failure hitherto of many managing authorities to grasp the opportunity it offers, especially in HNV forests (which most Member States are yet to define). The improvements described above should make this measure easier to implement but efforts are needed to raise awareness of its potential, both among forest authorities and forest managers. In the absence of an EU-wide baseline it will be important to apply the principle of additionality and for the Commission to define clearly the types of environmental forest management to be supported. Given that forest management cycles go well beyond the five to seven years for most RDP scheme agreements, Member States

may need to justify longer-term contracts, and use this measure in conjunction with non-productive investments (Article 18(1)(d)) and forest investments (Article 26).

In the current RDP for Portugal the farm *Herdade do Fervedouro* illustrates the type of project supported by the *Tejo Internacional* Integrated Territorial Intervention. The property has more than 200ha of oak, and the management of 50ha of this is being supported by annual forest-environment payments, to maintain groves of native trees and shrubs (including notable or relict specimens) and conserve the network of ecological corridors. The farm will also apply for non-productive investment support for deer fencing to protect natural regeneration.

## Investments in physical assets (non-productive investments) (Art. 18(1)(d))

### Key measure

#### Measure description

This investment support is an essential companion to the two environment-climate measures for agriculture and forestry respectively (Article 29 and Article 35) and to the Natura 2000 measure (Article 31), which all provide annual payments for specified land management but do not offer investment support. Non-productive environmental investments, often required 'up-front' at the start of a seven-year contract, can be vital to the feasibility of implementing the land management requirements, especially in higher level schemes targeted at HNV farming and forestry, and Natura 2000 habitats and species.

Now presented as part of a broader investment measure, paragraph 1(d) of Article 18 widens the scope of the current EAFRD measure to include investments *linked to the biodiversity conservation status of species and habitats* as well as the more familiar *non productive investments linked to the achievement of agri- and forest-environment commitments and enhancing the public amenity value of a Natura 2000 area or other high nature value area*.

#### Opportunities

Opportunities to support biodiversity priorities might include, for example, creating landscape features such as hedgerows, scattered trees and small woodland patches; installing electric fences to reduce the impact of large carnivores on livestock; removing invasive or non-native species from semi-natural grassland or forests; providing the means to reintroduce or control environmental livestock grazing (fencing and water supplies) on HNV grassland at risk of abandonment; investing in specialist small-scale machinery to replace hand mowing of alpine grasslands; altering drainage infrastructure to raise water levels seasonally on grasslands used by wetland birds, or permanently to restore fenland and blanket bog habitats; installing nest boxes for birds and bats; providing access to reintroduce environmental management to neglected HNV forests; making forest clearings to encourage natural regeneration of native species; creating small ponds and 'scrapes' for the benefit of amphibians; restoring or recreating areas of habitat to improve connectivity and resilience to climate change; and providing footpaths, bird watching hides and information for visitors to Natura 2000 sites, other protected nature conservation areas and HNV land.

### *Avoiding risks*

Risks of using this sub-measure are few, provided the interventions are based on sound evidence and care is taken to ensure that any investments made provide a balanced approach across different environmental priorities. For example, investments in an improved infrastructure for water management need to consider any downstream biodiversity implications from a changed water flow.

## **Basic services and village renewal in rural areas (Art. 21)**

### **Key measure**

### *Measure description*

This investment measure offers a wide range of potential support, from Natura 2000 management plans to broadband infrastructure, building conservation and studies and investments associated with the maintenance, restoration and upgrading of the cultural and natural heritage of villages and rural landscapes, including related socio-economic aspects.

### *Opportunities*

Article 21(1)(a) provides supports for *the drawing up and updating of plans of protection and management plans relating to NATURA 2000 sites and other areas of high nature value*, and can also be used for information and capacity building as well as small scale infrastructure such as signposting and information boards to improve the understanding of local biodiversity.

Article 21 (1)(f) supports the *...maintenance, restoration and upgrading of the cultural and natural heritage of villages and rural landscapes....* This could be an extremely valuable sub-measure to support the restoration of natural ecosystems and the restoration and/or creation of wilderness areas that require little or no management intervention for example old-growth forest, peatbogs, riparian forest, cliffs, semi-desert and river deltas. For this to be possible, nature conservation would need to be explicitly mentioned in the RDP among the sub-measure objectives and beneficiaries should include nature conservation bodies.

### *Avoiding risks*

Given the broad scope of this measure there is the potential for it to be used to support investments that could result in environmental harm. For example support could be provided for certain infrastructure or the upgrading of rural buildings that results in a loss of biodiversity, for example birds nesting in derelict farm buildings. Care should therefore be taken to ensure the investments supported under this measure are coherent with biodiversity objectives, result in environmental additionality and deliver environmental public goods.

At the Ynys-hir nature reserve in Wales the equivalent measure under the current regulation (conservation and upgrading rural heritage measure (323)) is being used to support the restoration of 106 hectares of floodplain grazing marsh and 115 hectares of saltmarsh. In addition to the restoration activities support under this measure is being used to improve visitor access and facilities to the site, improve public understanding of the site and its objectives and encourage effective partnership working across the tourism sector.

## Establishment of agro-forestry systems (Art. 24)

## Key measure

### *Measure description*

The measure provides support to establish agro-forestry systems and maintain them for up to three years. This measure was rarely used in the 2007-13 RDPs, despite the well-understood benefits to biodiversity and ecosystem services of agroforestry systems in which extensive arable or livestock production is combined with low-density forestry on the same parcels of land.

### *Opportunities*

Traditional systems of agro-forestry are highly adapted to local conditions and formerly widespread throughout Europe, but intensification of agriculture has led to their decline during the 20<sup>th</sup> century. Remaining examples have some of the highest levels of plant biodiversity in Europe and include the HNV grazed wood pastures and wooded meadows of Fenno-Scandinavia, ancient parklands in the UK and more than three million hectares of *dehesas* and *montados* in the Iberian peninsula, where oaks are grown for cork and acorns for fodder among extensively managed cereal crops, grassland and fallow. Recent interest in the environmental benefits of combining low-intensity agriculture and forestry has led to the introduction of RDP support for the establishment of new agro-forestry systems, and there is a developing body of research on appropriate techniques and their provision of ecosystem services (for example Burgess *et al*, 2004; Palma *et al* 2007; Graves *et al*, 2007).

Article 24 provides support for establishment of the system and three years' maintenance, leaving Member States to define the density of trees, taking account of local conditions and tree species used but, in contrast to the current regulation, there is no exclusion of Christmas trees and short-term cultivation of fast growing species.

This measure offers the opportunity to re-instate traditional systems where the trees have been lost and to establish HNV farming systems of the future, potentially of great biodiversity benefit provided indigenous trees and low-intensity agricultural systems are used, in appropriate locations, especially where there are opportunities to link existing silvo-pastoral habitats. After the three-year establishment period longer-term annual support could be provided by the agri-environment-climate and forest-environment measures.

### *Avoiding risks*

The biggest risk of this measure is that the opportunity it offers will continue to be ignored by Member States and farmers alike, and overcoming this is likely to require intensive training and advisory efforts to convince technical staff and farmers of the benefits of agro-forestry to farm and forest production, especially on marginal land of inherently low agricultural productivity. A secondary risk is that the potential biodiversity benefits will only be partially realised, or there will be perverse environmental impacts such as planting of fast growing and non-native species which are no longer excluded from support, as mentioned above. To avoid this, the nationally defined standards should specify tree species indigenous to the bio-climatic zone, and extensive silvicultural management. Care should also be taken in the choice and preparation of land for agro-forestry, to avoid damaging existing valuable habitats such as species-rich semi-natural grasslands and peatlands; intensive preparatory works, for example rock crushing, large scale ploughing and drainage should also be avoided. Support should be structured to retain the environmental benefits of public

support for agro-forestry, for example by requiring maintenance beyond the initial establishment period.

## Investments improving the resilience and environmental value of forest ecosystems (Art. 26)

*Key measure*

### *Measure description*

This article is new for this programming period (although the current EAFRD makes reference in the recitals to preserving forest ecosystems<sup>18</sup>, but not in the measures). Article 26 broadens the potential for forestry investments to support several environmental priorities beyond biodiversity (which is not specifically mentioned). Although superficially similar in scope to Article 18(1)(d), there is another very important difference in that Article 26 has no requirement for forest environmental investments to be non-productive. Support is restricted to investments *undertaken for environmental aims or providing ecosystem services and/or which enhance the public amenity value of forest and wooded land in the area concerned or improve the climate change mitigation potential of ecosystems*, but this is not meant to exclude *economic benefits in the long term*. The potential synergy between long-term economic and environmental objectives is to be welcomed, and is likely to make this measure more attractive to forest managers.

### *Opportunities*

Investment opportunities to improve forest resilience and forest ecosystem services will bring biodiversity benefits mainly by ensuring the adaptation of forest habitats to the effects of climate change. Investments might include, for example: altering drainage infrastructure to restore wetlands and peatbogs; creating ponds; moving from clear felling to continuous cover silvicultural techniques; opening small clearings; diversifying forest structures (ground, shrub and canopy layers through occasional pollarding and small-scale coppicing; using mixed stands of trees of different species and genetic provenance; controlling invasive or species; installing nest boxes for birds and bats; creating footpaths, bird watching hides and information points and conserving genetic resources of native European species.

### *Avoiding risks*

The biodiversity risks of this measure are greater than those of the non-productive investment measure, simply because of its wider environmental scope, which creates the risk of conflict between different environmental priorities. It will be important to apply the principle of coherent use of EU funds with no perverse environmental effects. For example, if this measure is used to support silvicultural techniques and tree species chosen only for their contribution to climate change mitigation through fast growth rate and carbon sequestration capacity (for example *Eucalyptus* spp) there are likely to be adverse impacts on biodiversity, water and fire risks. Investment in infrastructure for tourism should be planned to avoid damaging valuable habitats or increasing disturbance of important species.

---

<sup>18</sup> 'Recital (41) Forest-environment payments should be introduced for voluntary commitments to enhance biodiversity, preserve high-value forest ecosystems and reinforce the protective value of forests with respect to soil erosion, maintenance of water resources and water quality and to natural hazards.'

An example of how forest management can deliver biodiversity benefits under the current RDP can be seen in England. The England Woodland Grant Scheme has been used to support the recovery of threatened woodland birds and associated biodiversity in woodlands. Currently, of all eligible woodland in the target area for farmland bird species, determined by RSPB\* 33 per cent is under this scheme, representing 8,000 hectares. The uptake of the scheme exceeded expectations and has already met targets for halting the decline of certain species.

\*[http://www.rspb.org.uk/ourwork/conservation/projects/targeting/targeting\\_maps.asp](http://www.rspb.org.uk/ourwork/conservation/projects/targeting/targeting_maps.asp)

## Natura 2000 and Water Framework Directive payments (Art. 31)

## Key measure

### Measure description

This measure is rather different from other EAFRD measures in that it provides compensation payments for restrictions on farmland and forest management imposed by the national implementation of environmental regulations (the Habitats, Birds and Water Framework Directives (WFD)). Payments to farmers, foresters or other land managers in Natura 2000 areas are dependent on formal designation of the Natura 2000 site, and the existence of a management plan or equivalent legislation that specifies the management actions that land managers are legally required to carry out to contribute to restoring and maintaining that site's favourable ecological status. The CAP reform draft legislation makes clear that Article 31 payments cannot be used to compensate for the costs or impacts of any activities that are required by SMR or GAEC cross-compliance. Additionally paragraph 4(d) of Article 31 limits support to farmers under the Water Framework Directive to cases where the legislation *imposes major changes in type of land use, and/or major restrictions in farming practice resulting in a significant loss of income.*

An important new element in the Natura part of this measure (paragraph 6(b) of Article 31) is eligibility of land outside designated Natura 2000 sites, *in other delimited nature protection areas with environmental restrictions applicable to farming or forests*, provided that these contribute to Article 10 of the Habitats Directive<sup>19</sup>, and do not exceed five per cent of the Natura 2000 area in an RDP territory.

### Opportunities

The Natura 2000 element of this measure could be a very important part of a package of EAFRD measures supporting biodiversity and improving the conservation status of key EU farmland and forest habitats. This measure has relatively low transaction costs, can be paid at standardised rates to eligible farmers and foresters, and provides a basis for more targeted agri-environment-climate (Article 29), forest-environment (Article 35) and non-productive investment payments (Article 18(1)(d)), for example where habitat restoration or specialist management for Annex 1 species is required. The combination of these measures offers an additional incentive to land managers to adopt environmentally beneficial management, provided that the combinations of measures are environmentally coherent and ensure additionality.

The broadening of eligibility to include other nature conservation areas could help to improve habitat connectivity and biodiversity adaptation to climate change, but may be

---

<sup>19</sup> This requires Member States to try, where necessary, to improve the ecological coherence of the Natura 2000 network by encouraging the management of features of the landscape which are of major importance for wild fauna and flora.

limited by the requirement for ‘environmental restrictions’ to be in place - it is not entirely clear if these must be restrictions on specific land management activities, or if restrictions on the exercise of property rights also qualify. For example, on designated conservation sites in the UK the initial legal requirement is to obtain prior written consent from the environmental authorities for certain types of land management, and only if consent is refused is the proposed land management prohibited.

#### *Avoiding risks*

One of the biggest risks to the beneficial use of the Natura measure is continued delay in completing detailed management plans for Natura 2000 areas, and the legal requirements defining how the farmers and foresters must manage their land that form the basis for the payment calculations. The absence of Natura 2000 management plans and the absence of mandatory prescriptions have contributed to the low level of use of this measure in current RDPs, despite the fact that there has been an Axis 3 measure that could support plan preparation. It is important also for farmers and foresters to understand their role in meeting WFD and Natura 2000 obligations, therefore care should be taken to ensure that they have the necessary technical capacity to undertake the necessary actions and understand the required results. This can be facilitated in part through Article 15 – 16.

#### **4.3.2 Other EAFRD measures than can indirectly support biodiversity**

This section describes other EAFRD measures that can contribute indirectly to biodiversity priorities. **See also the discussion in Section 4.4 of crosscutting EAFRD measures supporting capacity building and delivery for all environmental priorities.**

### **Quality schemes for agricultural products and foodstuffs (Art. 17) Supporting Measure**

#### *Measure description*

This measure provides reimbursement for the costs to farmers of participating in quality product certification schemes, including those that guarantee *specific farming or production methods*. Support is for a maximum of five years.

#### *Opportunities*

Providing longer-term environmental support through the incorporation of standards in quality schemes could be particularly important in addressing any market failures related to biodiversity priorities. For example, using environmental criteria to improve farm income by adding value to foodstuffs and other farm products from HNV farming or from systems using endangered local breeds of livestock or crop varieties. Quality schemes can also be used to raise awareness amongst the public about environmental land management and the source of food and other farm products.

#### *Avoiding risks*

Quality schemes could be developed that have little or no consideration for environmental priorities and may lead to the increased use of environmentally damaging production practices. Care should be taken to ensure the support provided under this measure results in the delivery of a wide range of public goods, including those for the environment, by ensuring environmental considerations are considered within the quality schemes.

An example of a quality scheme incorporating environmental criteria can be seen in the French *Parc National de Cevennes* label '*Les authentiques du Parc*'. This initiative aims to improve the income from quality produce by marketing the biodiversity benefits (among other environmental services) delivered by the extensive production using indigenous beef and lamb breeds.

## Afforestation and creation of woodland (Art. 23)

## Supporting Measure

### *Measure description*

This measure provides support for the establishment and maintenance of woodland on both agricultural and non-agricultural land and combines two measures from the 2007-2013 programming period.

### *Opportunities*

Support for afforestation can be used to deliver biodiversity priorities if it is implemented in accordance with three key principles: providing environmental public goods where the market fails to do so, ensuring additionality and avoiding deadweight, and refining and targeting the support for environmental needs. This is helped by the way the measure is defined (to exclude short-rotation coppice, Christmas trees and fast growing species for energy production), and the addition of support for planting other perennial woody species in areas where afforestation is constrained by soil and climatic conditions. To realise biodiversity benefits the supported afforestation should be appropriately located, use a high proportion of indigenous species adapted to local conditions and provide a varied forest structure. For example, afforestation support may not be needed on abandoned agricultural land where forest regeneration is already happening (and investment support or forest-environment payments may be more appropriate). In other circumstances afforestation support may be essential to achieve important biodiversity objectives, for example the restoration of riparian forest in intensively farmed or urban floodplains.

### *Avoiding risks*

Care should be taken in the choice and preparation of land for afforestation, to avoid damaging existing valuable habitats such as species-rich semi-natural grasslands and peatlands. This might include for example the use of the Environmental Impact Assessment (EIA) regulation<sup>20</sup> and other guidelines on planting and semi-natural habitats to avoid perverse environmental impacts. Intensive preparatory works, for example rock crushing, large scale ploughing, drainage, should also be avoided. Offers of support should be structured to retain the environmental benefits of public support for afforestation (for example by requiring maintenance beyond the initial establishment period). An important aspect of implementation will be to extend the technical capacity of beneficiaries by providing advice and information about good agricultural and forestry practice for biodiversity and the local flora and fauna. This can in part be facilitated through Article 15 and 16.

---

<sup>20</sup> Council Directive 85/337/EEC



## **Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)**

### **Supporting Measure**

#### *Measure description*

This measure provides support for land management operations that prevent or help to restore damage from natural disasters and catastrophic events in forests. The investments provided under this measure can support protective infrastructure, such as fire breaks and setting up monitoring activities.

#### *Opportunities*

There is greater emphasis on preventive action and forest management plans in this revised measure, which could be particularly beneficial in areas where forests or woodlands are undermanaged. Improving the resilience of forests to disease and pests, preventing fire damage and restoring forest ecosystems have the potential to deliver biodiversity priorities and help both forests and biodiversity adapt to the effects of climate change.

#### *Avoiding risks*

From the biodiversity perspective it should be recognised that naturally occurring catastrophic events, such as storms or floods, are an important component of natural forest dynamics, and prevention and restoration efforts should take this into account, particularly in HNV forests. For example, the creation of firebreaks/forest roads should not affect valuable biotopes, such as old growth or species-rich forest. Firebreaks should be managed by grazing rather than by use of chemicals or machinery. Small-scale prevention activities can minimise negative biodiversity impacts, for example closing forest roads and hiking paths during fire season, CCTV forest fire/arson surveillance, mowing vegetation on roadsides, tree pruning, and limiting the removal of dead and burnt wood. Changing silvicultural management (for example, by increasing diversity of indigenous species and provenance) may improve resilience to pests and diseases, and use of biological pest control methods may reduce the need for pesticide applications.

The Latvian RDP provided financial support under a similar measure to restore a large area of storm damaged forest using a mix of different species of young trees grown by natural regeneration in another part of the forest. This will ensure greater resilience to wind damage in the future and a more sustainable forest ecosystem in the long term.

## **Investments in new forestry technologies and in processing and marketing of forest products (Art. 27)**

### **Supporting measure**

#### *Measure description*

This investment measure can be used to support new forest technologies, such as harvesting machinery, new processing methods and the marketing of new forest products.

#### *Opportunities*

Intensive forestry operations such as clear felling, the use of certain types of machinery, and fertilisation can all cause damage to forest biodiversity. This measure, aimed at enhancing forest potential and adding value to forest products can be used to support environmentally friendly and modern harvesting machinery to prevent damage to the forest floor and reduce

waste in the harvesting process, but will need careful planning and implementation to realise this potential.

#### *Avoiding risks*

Care will be needed in delivering this measure to ensure that improvements in forest technology and productivity avoid perverse environmental impacts on biodiversity and that they are coherent with other priorities and measures in ensuring environmental additionality. Investments can also be used to support the production and marketing of new forest products such as wood fuel, but care is required when extracting forest residues for energy production that a balance is maintained between the amount of wood needed for extraction and the amount of wood (particularly dead wood) needed to maintain existing biodiversity and ensuring coherence with other objectives. Investments under this, and all measures, should only be used to support the delivery of environmental public goods where there is a market failure.

In the Valencia region in Spain residual forest biomass is being used to produce wood pellets and other compressed wood products such as fibreboard. The project supports the development of vegetation structures which are less vulnerable to forest fires and adds value to forest products. This has increased the economic benefits from the forest system and reduced the accumulation of woody material which is a major risk in the spread of forest fires and the control of forest pests and diseases. . One of the key lessons learnt in this process is the importance of good forest management and social awareness in environment protection and preservation.

(ENRD project database [http://enrd.ec.europa.eu/policy-in-action/rdp\\_view/en/view\\_projects\\_en.cfm](http://enrd.ec.europa.eu/policy-in-action/rdp_view/en/view_projects_en.cfm))

### **Organic (Art. 30)**

### **Supporting Measure**

#### *Measure description*

This land management measure, which provides support for both conversion to and maintenance of organic farming systems is now separate from the agri-environment-climate measure, but is similar in structure, with five to seven year agreements and provision for transaction costs in the payment calculations (including at 30 per cent for groups of farmers).

#### *Opportunities*

There is considerable potential to increase the share of organic farming within the total farmed area, which now ranges from almost negligible in Bulgaria to more than 15 per cent in Austria (2009 data). The main benefit for biodiversity of organic production is the reduction in pressures on biodiversity through the adoption of more environmentally friendly agricultural management practices. For example, reduced use of manufactured pesticides, prohibition of inorganic fertilisers, more sympathetic management of non-cropped habitats, and greater emphasis on crop rotation and mixed farming. A meta-analysis of pre 2002 literature by Bengtsson *et al* (2005) reveals that organic farms support on average 30 per cent higher species richness, with a 50 per cent mean increase in species abundance. Historically, yields and intensity of organic production are nearly always lower than in conventional systems; however, there is evidence to suggest organic production can match conventional yields in certain cases (see for example Seufert *et al*, 2012).

There are two further distinct biodiversity opportunities offered by this measure. The first is as part of a package of measures to support the continuation of HNV farming (which is often

near-organic in character already), mixed farming systems and agro-forestry systems. The second opportunity is the conversion of more intensive conventional systems, which will bring biodiversity benefits from improved soil management, diversity of crops and biological or cultural pest control. The extent to which non-farmed features are retained and managed for biodiversity may depend on the requirements of the certification scheme.

#### *Avoiding risks*

There are relatively few risks to biodiversity in the use of this measure, although three are worth mentioning. The first is the apparent reluctance on the part of the farming sector and some authorities to use the organic support measure for HNV farming where such support payments could assist the long term economic survival of HNV systems. This can be avoided through more effective programming, awareness raising and the appropriate targeting of interventions where they will provide most benefit. The second issue is the distinction between the EAFRD support for organic farming and the Pillar 1 greening requirements, which give organic farms an automatic entitlement to the 30 per cent greening payment. There needs to be a clear distinction between the two, which farmers can understand and which demonstrates the additionality of the EAFRD support and ensures a coherent use of CAP support. The third issue relates to the potential support provided to farmers who operate relatively intensive organic production, particularly in the dairy and horticultural sectors. Care should be taken to ensure that public support for public goods is only provided where there is a market failure, through requirements set out in the RDP.

### **Payments to and designation of areas facing natural or other specific constraints (Art 32 – 33)**

#### ***Supporting Measure***

#### *Measure description*

Substantial and significant changes have been made by Article 33 to the definition of Less Favoured Areas (LFAs), now to be called *areas facing natural and other specific constraints*; and Article 32 changes the system of compensation for the inherent difficulties of farming these areas. The defining criteria have been changed for just one of the three types of area, those with *significant natural constraints*; the definitions of *mountain areas*, and *areas with specific constraints*, such as islands and coastal areas, are not affected. The Commission has defined eight soil and climate criteria<sup>21</sup> as the basis for classifying these areas, which must meet at least one of the criteria on 66 per cent of the agricultural land at the administrative area level LAU 2 (formerly NUTS 5). Member States are expected to implement the new criteria for 2014 and 'fine tune' the definition by excluding areas in which the natural constraints to agricultural production *have been overcome by investments or by economic activity*. Another potentially significant change, in principle favouring smaller farms, is the requirement to make payment rates per hectare degressive for farms above a certain size (to be defined in the RDP).

More than half the farmland in the EU is currently classified as LFA, and boundary changes are contentious, especially where farmers are likely to lose eligibility for payments. Article 33 addresses this by providing the option of offering such farmers a steeply declining transitional payment (from 80 per cent to twenty per cent of 2013 rates) for the three years to 2017. As an incentive to timely implementation, Member States that have failed to

---

<sup>21</sup> see Annex II of the proposed Regulation COM (2011) 627/3

implement the new definition for January 2014 will have to apply this transitional payment system to all farmers in the equivalent existing LFA areas, including farmers that subsequently qualify for the new payments.

### *Opportunities*

The proposed changes are potentially beneficial for biodiversity and other ecosystem services, compared to the current LFA, because there appears to be, in principle, a clearer focus on marginal land where the climate, soil or terrain continue to limit agricultural productivity. In these and mountainous and remote areas farming systems are more likely to be low-input and to include managed semi-natural habitats. It remains unclear if the changes proposed will result in any significant changes on the ground. Most HNV farming and forestry systems are likely to be on land which meets the new criteria, however it will be necessary for Member States to ensure these measures are appropriately targeted towards areas most in need of support.

The particular relevance of Article 32 payments to biodiversity priorities is in providing support for the maintenance of farming in areas that are often economically marginal. The payments can help to improve the economic viability of low-intensity farming systems and prevent intensification or abandonment of HNV or other valuable and semi-natural areas, where habitat connectivity and unfarmed features help to deliver biodiversity priorities.

### *Avoiding risks*

The main risk of this measure is the definition of '*areas facing natural and other specific constraints*', in a way that excludes important biodiversity areas, possibly because they have not been previously included in the UAA. This can be avoided through consultation with the relevant environmental and farming stakeholders in the Member State and ensuring that these areas include the most important farmland that would otherwise be at risk of abandonment. In the design of this measure it is important to consider if the support provided is coherent with other funds targeted or available to these areas, that it is targeted towards those areas will deliver environmental benefits across the wider landscape and that support is sufficient to take into account the full cost of continuing farming in such areas. To be cost-effective, support under this measure should be targeted towards farm types that are most economically disadvantaged and of most environmental value. As this measure does not have environmental management requirements attached (although it can be limited to certain types of farm) it will be important to use the measure as part of a package of measures targeted at water management including Natura 2000 (Article 31), agri-environment-climate (Article 29) and investment measures (eg Article 18).

The designation of areas facing natural constraints can be used in combination with agri-environment-climate payments to support the preservation of biodiversity and agricultural ecosystems and landscapes and their high nature value in areas that are at risk of abandonment. An example of how this has been achieved under the current programming period can be seen in a scheme within the Cypriot agri-environment measure that targets the preservation of local tree and bush varieties. The intention is to ensure that local plant varieties such as almonds, carobs, hazel nut trees, dog rose, sage, lentisk and terebinth, are restored and appropriately managed in a traditional manner in keeping with high nature value farming. Although this scheme is open to all farmers, preference is given to farmers managing land in less than favoured areas to ensure that a minimum level of management is carried out and to support rural populations in decline.

## WATER



### Priority environmental outcomes for water:

- improved hydrological and biological conservation status of wetlands, rivers and aquifers, through reduced water abstraction and more efficient storage and re-use of water in agriculture;
- diffuse pollution of surface and ground waters by nitrates, phosphates and Plant Protection Products (PPPs) as a result of agricultural and forest management is reduced to a level that allows WFD objectives to be met;
- efficiency of use of fertilisers and PPPs in agricultural and forestry is improved; and
- water flows on or across agricultural and forest land are managed to reduce environmental risks downstream.

### EAFRD measures to deliver water priorities:

- Agri-environment – climate (Art. 29)
  - Forest-environmental and climate services and forest conservation (Art. 35)
  - Investments in physical assets (Art. 18)
  - Basic services and village renewal in rural areas (Art. 21)
  - Afforestation and creation of woodland (Art. 23)
  - Establishment of agro-forestry systems (Art. 24)
  - Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)
  - Investments improving the resilience and environmental value of forest ecosystems (Art. 26)
  - Natura 2000 and Water Framework Directive payments (Art. 31)
- Key measures**
- Quality schemes for agricultural products and foodstuffs (Art. 17)
  - Investments in new forest technologies and in processing and marketing of forest products (Art. 27)
  - Organic (Art. 30)
  - Payments to and designation of areas facing natural or other specific constraints (Art. 32 and Art. 33)
- Supporting measures**

### 4.3.3 Key EAFRD measures for water

The following measures have the potential to deliver environmental priorities for water by reducing the risk of diffuse pollution and/or regulating water flows and/or limiting the need to abstract water for agricultural use.

The scope and content of these measures has been described in the section on Biodiversity priorities above, and is not repeated here. This section focuses on opportunities to deliver water priorities and any identified risks.

Agri-environment-climate (Art. 29)

**Key measure**

#### *Measure description*

Agri-environment-climate is a land management incentive measure with an annual payment per hectare for environmental management, with scope to target and tailor detailed management requirements to specific environmental priorities. For a description of the measure see pages 18-19.

#### *Opportunities*

This measure can help to delivery water quality priorities across many types of farmland, for example by the creating wider buffer strips than those required adjacent to water courses as part of the proposed new GAEC 1 cross-compliance condition. More targeted measures include management or restoration of wetlands and floodplains through permanent or seasonal drainage management raising water levels, and establishing perennial vegetation to act as buffers to diffuse pollution and reduce water flow during extreme events (these may require initial investment support). Actions carried out under the agri-environment-climate measure can be particularly effective if supported by advice and training (Article 15 - 16) or when used in conjunction with measures that can support preliminary environmental work such as ditch blocking or habitat restoration (Article 18(1)(d)). For example, these measures have been used in combination to help restore peatland areas in high water catchments in the UK, with benefits to biodiversity and water flow.

The incentive of 30 per cent transaction costs for group applications, and the improved support for co-operative action in the draft regulation should be a useful means of encouraging the level of interventions across water catchments necessary to limit the impact of diffuse agricultural pollution from a variety of sources, particularly if combined with targeted advisory services.

#### *Avoiding risks*

There are several risks to water priorities in using this measure. Where 'entry-level' or less-demanding agri-environment-climate schemes are used to achieve broad coverage, there is a risk of deadweight and loss of additionality. This can be minimised through the effective use of targeting and differentiation of management requirements in specific catchments or towards specific risks such as diffuse pollution sources. It is essential that the intervention is based on sound evidence and that it is targeted at the appropriate land. This can be helped by farmer advice and training but may also require allocation of additional resources to the delivery process, especially where farmers are unfamiliar with the objectives. Care should also be taken to ensure that support provided under this measure is used to deliver public goods and results in environmental additionality and coherence with other objectives, this may include targeting actions to deliver carbon sequestration as well as water priorities, for example through the re-wetting of peatland areas, or planting riparian vegetation to prevent flood risk and minimise diffuse pollution reaching water courses.

## Forest-environmental and climate services and forest conservation (Art. 35)

### Key measure

#### *Measure description*

Forest-environment-climate is a land management incentive measure with an annual payment per hectare for environmental management, with scope to target and tailor detailed management requirements to specific environmental priorities. For a description of the measure see pages 20 - 21.

#### *Opportunities*

This measure can be used to improve the management of neglected riparian woodlands help reduce diffuse agricultural pollution reaching water bodies and help stabilise river banks damaged by livestock by re-establishing natural vegetation along water courses. The measure can also help to support more environmentally sustainable forest management which can result in reduced water requirements and prevent water and sediment run-off as a result of clear felling.

#### *Avoiding risks*

In the absence of an EU-wide baseline it will be important to apply the principle of additionality and for the Commission to define clearly the types of environmental forest management to be supported. Care should also be taken to ensure that forest environment support is targeted at those areas with the greatest potential to support water priorities and is applied at the wider landscape and catchment scale. For a fuller description of the risks to using this measure see the biodiversity section page 21.

Under the current RDP forest environmental payments have been used to help restore poplar groves alongside riverbanks in the *Pais Vasco* region of Spain to more naturally functioning forest areas.

## Investment in physical assets (Art. 18)

### Key measure

#### *Measure description*

Investment in physical assets is a broad measure supporting investments that range from improving agricultural performance to processing, marketing and development of products, and infrastructure improvements, plus non-productive investments linked to the achievement of agri- and forest environment commitments. For a fuller description of Article 18(1)(d) relating to agri- and forest- environment commitments see pages 21-22.

#### *Opportunities*

Investments in physical assets can help farmers both to reduce water pollution and to make more efficient use of water. For example, this can include agricultural investments to modernise manure storage and handling facilities, improve existing water infrastructure to limit water leaks, build small-scale irrigation reservoirs, create artificial wetlands for treatment and reuse of wastewater and use more efficient irrigation technology. Non-productive investments, such as reconnecting floodplain areas to rivers to act as flood storage reservoirs and restoring wetland systems can bring wider benefits to areas downstream at risk of flooding.

### *Avoiding risks*

The scope of this measure is particularly broad and could, if inappropriately designed, be used to support investments that are required as part of national and EU legislation or where there is a clear market reward. When using this measure to deliver environmental benefits particular attention should be paid to the principles of ensuring that: public funds are used to support the provision of public goods only where there is market failure; support is provided only above the baseline for environmental management; and there is environmental additionality. Support should be based on sound evidence and care taken to ensure that any investments made take a balanced approach across different environmental priorities.

## **Basic services and village renewal in rural areas (Art. 21)**

### **Key measure**

#### Measure description

This investment measure covers a wide range of potential support from Natura 2000 management plans, broadband infrastructure, building conservation and restoration of natural heritage. For a fuller description see page 22.

#### *Opportunities*

Article 21(1)(a) provides supports for *the drawing up and updating of plans of protection and management plans relating to NATURA 2000 sites and other areas of high nature value*, and can also be used for information and capacity building as well as small scale infrastructure such as fencing and information boards to improve the understanding of aquatic areas.

Article 21 (1)(f) supports the *...maintenance, restoration and upgrading of the cultural and natural heritage of villages and rural landscapes....* This could be an extremely valuable sub-measure to support the restoration of natural aquatic ecosystems and the restoration and/or creation of wilderness areas that require little or no management intervention for example, peatbogs, riparian forest, restoring river patterns and river deltas which all have beneficial impacts on water priorities. For this to be possible, water priorities would need to be explicitly mentioned in the RDP among the sub-measure objectives, and beneficiaries should include nature conservation bodies.

#### *Avoiding risks*

Given the broad scope of this measure there is the potential for it to be used to support investments that could result in environmental harm. Care should therefore be taken to ensure the investments supported under this measure are coherent with water priorities and result in environmental additionality.

Support for basic services and village renewal can have important outcomes for the protection of water. A good example of how this measure can protect water and combat water scarcity can be seen in Greece where investments were made to modernise the irrigation system in the Region of Western Macedonia.

The new electronic irrigation system restricts farmers to using allocated amounts of water and avoids excessive extraction. This investment facilitated monitoring and collection of irrigation data, reduced illegal extraction and ensured better and quicker maintenance of the system. Furthermore, cultivation in the area improved as a result of more appropriate irrigation.



## **Afforestation and creation of woodland (Art. 23)**

### **Key Measure**

#### *Measure description*

This measure provides support for the establishment and maintenance of woodland on both agricultural and non-agricultural land and combines two measures from the 2007-2013 programming period.

#### *Opportunities*

Research in Wales has shown that planting tree shelter belts across a slope can reduce the risk of lowland flooding by improving the rate of water infiltration and reducing the volume of runoff during storms (Wheatear *et al*, 2008), as well as improving shelter for grazing livestock. Native trees along river margins will provide water quality benefits as well as returning ecological function to the stream (Parkyn, 2004). Planting trees and shrubs, rather than relying on natural regeneration alone within riparian margins, will help to speed up the process of change (Stocken *et al*, 2012).

In many cases afforestation will not deliver water priorities in isolation and should be combined with other measures that help to manage existing vegetation and help to limit the diffuse pollution from land management practices. These include the agri-environment-climate and organic measures (Articles 29 and 30) and the forest environment measure (Article 35).

#### *Avoiding risks*

Care should be taken to ensure that the species and location of new planting are chosen to avoid negative impacts on water availability through increased absorption and transpiration, and to maximise the benefits of catchment scale intervention by using group applications, cooperative measures and advice to ensure implementation is delivered on sufficient scale. For other risks associated with this measure see the biodiversity section page 27.

## **Establishment of agro-forestry systems (Art. 24)**

### **Key measure**

#### *Measure description*

The measure provides support to establish agro-forestry systems and maintain them for up to three years. For a fuller description see page 23.

#### *Opportunities*

The establishment of agro-forestry systems can help to reduce water stress in livestock through improved shading, and reduce the overall need for irrigation and water abstraction where intensity of agricultural management is reduced to comply with the requirement for extensive agricultural production.

#### *Avoiding risks*

Care should be taken to ensure that the species and location of new planting are chosen to avoid negative impacts on water availability through increased absorption and transpiration, and to maximise the benefits of catchment scale intervention by using group applications, cooperative measures and advice to ensure implementation is delivered on sufficient scale. For other risks associated with this measure see the biodiversity section page 23.

## **Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)**

### **Key Measure**

#### *Measure description*

This measure provides support for land management operations that prevent or help to restore damage from natural disasters and catastrophic events in forests. The investments provided under this measure can support protective infrastructure, such as firebreaks and setting up monitoring activities.

#### *Opportunities*

The greater emphasis on preventative actions and forest management plans included under this measure can help to maintain existing forest areas which may be providing wider benefits to water priorities, such as shading to prevent drought stress or acting as filter strips to prevent diffuse pollution. Maintaining forests or restoring damaged forests in the landscape can also help to manage water flows on or across agricultural and forest land to prevent downstream risks.

#### *Avoiding risks*

Naturally occurring catastrophic events, such as storms or floods, are an important component of natural forest dynamics, and prevention and restoration efforts should take this into account. For a fuller account of these risks see the biodiversity section page 28. Preventative actions should be based on sound evidence and delivered at an appropriate scale. Care should be taken to ensure that restoration actions are targeted towards those areas that have the greatest potential to deliver environmental benefits and where the species composition of forest stand structure is to be changed, and that restoration actions are evidence based.

## **Investments improving the resilience and environmental value of forest ecosystems (Art. 26)**

### **Key measure**

#### *Measure description*

This investment measure provides one off payments to support investments undertaken for environmental aims or providing ecosystem services and/or which enhance the public amenity value of forest and wooded land in the area concerned or improve the climate change mitigation potential of ecosystems. Unlike Article 18(1)(d) this measure has no requirement for forest environmental investments to be non-productive. For a fuller description see page 24.

#### *Opportunities*

Maintaining the environmental value of existing forest ecosystems can help to reduce flood risk and improve soil stabilisation and water filtration. Support provided under this measure could be used to adapt forest management approaches to focus more on water priorities, particularly when used in conjunction with forest environment payments (Article 35), but care should be taken not to cause direct trade-offs between water priorities and other ecosystem services.

Where forests and woodlands have been neglected or poorly managed, this measure may benefit from use in combination with training and advisory services (Articles 15 and 16) to raise awareness of the importance of forest ecosystems to water priorities.

#### *Avoiding risks*

This measure can support a wide range of priorities and support does not necessarily need to be non-productive. Therefore there is a risk that this measure could be used to support other priorities in the absence of, or to the detriment to, water priorities. Care should be taken to ensure that support under this measure is coherent with water priorities, and ensure environmental additionality. Support, particularly support which can result in productive benefits, should only be provided where there is a market failure to supply public goods. For further risks associated with this measure see the biodiversity section page 24.

### **Natura 2000 and Water framework directive payments (Art. 31)**

#### ***Key measure***

#### *Measure description*

This measure provides compensation payments for legal restrictions on farmland and forest management imposed by the national implementation of environmental regulations (the Habitats, Birds and Water Framework Directives (WFD)). In relation to water priorities it is worth highlighting that paragraph 4(d) of Article 31 limits support to farmers under the Water Framework Directive to cases where the legislation imposes major changes in type of land use, and/or major restrictions in farming practice resulting in a significant loss of income. For a fuller description see pages 25 - 26.

#### *Opportunities*

The WFD element of this measure (which is only available to farmers) could be a very important part of a package of EAFRD measures supporting water priorities and improving the status of water bodies and courses across the EU. The measure as a whole has relatively low transaction costs, can be paid at standardised rates to eligible farmers and foresters, and provides a basis for more targeted agri-environment-climate (Article 29), forest-environment (Article 35) and non-productive investment payments (Article 18), for example where specialist management is required. The combination of these measures can help to provide added incentive for land managers to adopt environmentally beneficial management, provided the combinations of measures are environmentally coherent and ensure additionality.

#### *Avoiding risks*

There are relatively limited risks in applying this measure, other than those set out in the biodiversity section (pages 25 - 26), given the safeguards explicitly stated in the regulation (Article 31(4)) which are in line with the principle of payments above environmental baseline, coherent use of funds and ensuring additionality. However, it is important for farmers and foresters to understand their role in meeting WFD and Natura 2000 obligations, therefore care should be taken to ensure that they have the necessary technical capacity to undertake the necessary actions and understand the required results. This can be facilitated in part through Article 15 – 16.

#### **4.3.4 Other EAFRD measures than can indirectly support water priorities**

This section describes other EAFRD measures that can contribute indirectly to water priorities. **See also the discussion in Section 4.4 of crosscutting EAFRD measures supporting capacity building and delivery for all environmental priorities.**

##### **Quality schemes for agricultural products and foodstuffs (Art. 17)**

##### **Supporting Measure**

###### *Measure description*

This measure provides reimbursement for the costs to farmers of participating in quality product certification schemes, including those that guarantee *specific farming or production methods*. Support is for a maximum of five years.

###### *Opportunities*

Providing longer-term environmental support through the incorporation of standards in quality schemes could be particularly important in addressing any market failures to address water problems, in particular the over abstraction of water. For example, using environmental criteria to add value to foodstuffs and other farm products from non-irrigated farming or from systems that use reduced fertiliser and PPPs. Quality schemes can also be used to raise awareness amongst the public about environmental land management and the source of food and timber products.

###### *Avoiding risks*

Quality schemes could be developed that have little or no consideration for environmental priorities and may lead to the increased use of environmentally damaging production practices. Care should be taken to ensure the support provided under this measure results in the delivery of a wide range of public goods, including those for the environment, by ensuring environmental considerations are considered within the quality schemes.

##### **Investments in new forestry technologies and in processing and marketing of forest products (Art. 27)**

##### **Supporting measure**

###### *Measure description*

This investment measure can be used to support new forest technologies, such as harvesting machinery, new processing methods and the marketing of new forest products.

###### *Opportunities*

Intensive forestry operations such as clear felling, the use of certain types of machinery, and fertilisation can all cause damage to forest soils, which in turn can lead to sedimentation and run-off impacting on watercourses. This measure, aimed at enhancing forest potential and adding value to forest products can be used to support environmentally friendly and modern harvesting machinery to prevent damage to the forest floor and reduce waste in the harvesting process.

###### *Avoiding risks*

Care will be needed in delivering this measure to ensure that improvements in forest technology and productivity avoid perverse environmental impacts on water priorities and that they are coherent with other priorities and measures in ensuring environmental

additionality. Investments under this, and all measures, should only be used to support the delivery of environmental public goods where there is a market failure.

## **Organic (Art. 30)**

## **Supporting Measure**

### *Measure description*

This land management measure, which provides support for both conversion to and maintenance of organic farming systems is now separate from the agri-environment-climate measure, but is similar in structure, with five to seven year agreements and provision for transaction costs in the payment calculations (including at 30 per cent for groups of farmers).

### *Opportunities*

Organic farming helps to deliver water priorities through the reduced use of mineral fertilisers and plant protection products and thus decrease the chances of diffuse pollutants leaching into local watercourses. Organic farming can also help to improve soil water retention capacity and reduce the need for irrigation.

The organic measure can also be used to help support low intensity land management in conjunction with more targeted management such as that provided through the agri-environment-climate measure (Article 29), for example by converting from irrigated to dry land crops in the Mediterranean region.

### *Avoiding risks*

Despite the reduced use of chemical and fertilisers and PPPs care should still be taken to avoid nitrate pollution from organic manures and the ploughing of leys including legumes. This can be facilitated by increasing the awareness and technical capacity of land managers in carrying out organic management. Support under this measure can also be provided to farmers who operate relatively intensive organic production, particularly in the dairy and horticultural sectors. Care should be taken to ensure that public support for the provision of public goods only where there is a market failure, and that support is coherent with other priorities and measures, through clear prescriptions set out in the RDP. For additional risks of using this measure see the biodiversity section pages 29 - 30.

## **Payments to and designation of areas facing natural or other specific constraints (Art. 32 – 33)**

## **Supporting Measure**

### *Measure description*

This measure provides annual per hectare support payments to compensate farmers for additional costs and income foregone related to the natural constraints on agricultural production in the area concerned. For a fuller description see pages 30 - 31.

### *Opportunities*

The particular relevance of Article 32 payments to water priorities is in providing support for the maintenance of farming in areas often economically marginal, which can help to improve the economic viability of low-intensity farming systems and prevent intensification or abandonment. These can help to maintain more extensive forms of farmland

management with benefits for water quality and help to maintain semi-natural grazed areas that are beneficial for hydrological connectivity and water storage functions. For a fuller description of the environmental opportunities relating to this measure see the Biodiversity section pages 30-31.

*Avoiding risks*

To be cost-effective, support under this measure should be targeted towards farm types that are most economically disadvantaged and of most environmental value. In the design of this measure it is important to consider if the support provided is coherent with other funds targeted at or available in these areas and that support is sufficient to take into account the full costs of continuing farming in such areas. As this measure does not have environmental management requirements attached (although it can be limited to certain types of farm) it will be important to use it as part of a package of measures targeted at water management including Natura 2000/WFD (Article 31), agri-environment-climate (Article 29) and investment measures (eg Article 18). For further risks see the biodiversity section pages 30-31.

## SOIL



### Priority environmental outcomes for soils

- risks of soil erosion by wind and water are reduced;
- organic matter content of mineral soils is improved;
- wet organic soils are maintained in good hydrological and biological condition; and
- soil functionality and soil capacity to provide ecosystem services are protected from damage by agricultural and forestry operations.

### EAFRD measures to deliver soil priorities

- Agri-environment – climate (Art. 29)
  - Forest-environmental and climate services and forest conservation (Art. 35)
  - Investments in physical assets (Art. 18)
  - Basic services and village renewal in rural areas (Art. 21)
  - Afforestation and creation of woodland (Art. 23)
  - Establishment of agro-forestry systems (Art. 24)
  - Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)
  - Investments improving the resilience and environmental value of forest ecosystems (Art. 26)
- Key measures
- Quality schemes for agricultural products and foodstuffs (Art. 17)
  - Investments in new forestry technologies and in processing and marketing of forest products (Art. 27)
  - Organic farming (Art. 30)
  - Natura 2000 and Water Framework Directive payments (Art. 31)
  - Payments to and designation of areas facing natural or other specific constraints (Art. 32 – 33)
- Supporting measures

#### 4.3.5 Key EAFRD measures for soil

The following measures have the potential to deliver environmental priorities for soil by reducing the risk of erosion and/or improving the functionality of soil (climate mitigation is covered in the next section).

The scope and content of these measures has been described in the section on biodiversity priorities above, and is not repeated here. This section focusses on opportunities to deliver soil priorities and also identifies any risks.

## **Agri-environment-climate (Art. 29)**

### **Key measure**

#### *Measure description*

Agri-environment-climate is a land management incentive measure with an annual payment per hectare for environmental management, with scope to target and tailor detailed management requirements to specific environmental priorities. For a description of the measure see pages 18-19.

#### *Opportunities*

There are many opportunities for this measure to support soil priorities. For example, to reduce soil erosion, support can encourage management of arable land using contour ploughing, vegetative strips on steep slopes, the ploughing in of green manure to improve soil structure, and the maintenance of green cover over winter and under permanent crops. Where there are severe risks of erosion conversion of arable land to permanent grassland may be the best option. For other examples of how the agri-environment climate measure can be used see the biodiversity section (pages 18-19) and water section (page 33).

#### *Avoiding risks*

There are several risks to soil priorities in using this measure. Where 'entry-level' or less-demanding agri-environment-climate schemes are used to achieve broad coverage, there is a risk of deadweight and loss of additionality. This can be minimised through the effective use of targeting and differentiation of management requirements in specific areas or towards specific soil types and risk areas. Where specific management is required, it is essential that the intervention is based on sound evidence and that it is targeted at the appropriate land. This can be helped by farmer advice and training but may also require allocation of additional resources to the delivery process, especially where farmers are unfamiliar with the priorities and actions required. Care should be taken to ensure that support provided under this measure is used to deliver public goods and results in environmental additionality, which may include targeting actions that also deliver carbon sequestration through the maintenance of soil organic matter or the re-wetting of peatland areas.

One example of how agri-environment measures under the current programming period can deliver benefits for soil is an agri-environment scheme in Cyprus that targets the preservation of local tree and bush varieties. One of its specific environmental objectives is to improve the soil fertility in these areas. Beneficiaries receive payments for ploughing-in the vegetative cover between the rows of permanent crops twice a year.

## **Forest-environmental and climate services and forest conservation (Art. 35) and Investments improving the resilience and environmental value of forest ecosystems (Art. 26)**

### **Key measures**

#### *Measure description*

Forest-environmental and climate services and forest conservation measure is a land management incentive offering an annual payment per hectare for environmental management, with scope to target and tailor detailed management requirements to specific



environmental priorities. For a description of the measure see pages 20 - 21. The Article 26 investment measure provides one off payments to support investments undertaken for environmental aims or providing ecosystem services and/or which enhance the public amenity value of forest and wooded land in the area concerned, or improve the climate change mitigation potential of ecosystems. Unlike Article 18(1)(d) this measure has no requirement for forest environmental investments to be non-productive. For a fuller description see page 24.

#### *Opportunities*

These two measures can be used to introduce soil protection techniques to forest management, particularly in erosion prone soils, for example adopting continuous cover forestry systems and using modern harvesting equipment that minimises soil disturbance.

#### *Avoiding risks*

In the absence of an EU-wide baseline it will be important to apply the principle of additionality and for the Commission to define clearly the types of environmental forest management to be supported. Care should also be taken to ensure that forest environment support is targeted at those areas with the greatest potential to support soil priorities and is applied at the wider landscape and catchment scale. For a fuller description of the risks of using this measure see the biodiversity section pages 20-21 and page 24.

An example of how forest environment payments can be used to support sustainable forest management can be seen in the Bakony mountains, Hungary. The payments were made as part of a ten-year project to ensure continuous management of the forest in the area, using modern equipment that reduces damage to the soils and trees.

### **Investment in physical assets (Art. 18)**

#### **Key measure**

#### *Measure description*

Investment in physical assets is a broad measure supporting investments that range from improving agricultural performance to processing, marketing and development of products, and infrastructure improvements, plus non-productive investments linked to the achievement of agri- and forest environment commitments. For a fuller description of Article 18(1)(d) relating to agri- and forest- environment commitments see pages 21-22.

#### *Opportunities*

This measure can be used to provide infrastructure to protect soils, including track ways to prevent soil compaction by heavy machinery, hard standings for livestock management and fencing to limit livestock movements and prevent poaching of soils.

#### *Avoiding risks*

This measure could also pose threats to soil conservation, in particular by supporting projects that can result in soil sealing, for example during the construction of new buildings and roads. Care should be taken to ensure support provided under this measure results in environmental additionally and avoids negative environmental impacts.

## Basic services and village renewal in rural areas (Art. 21)

### Key measure

#### *Measure description*

This investment measure covers a wide range of potential support from Natura 2000 management plans, broadband infrastructure, building conservation and restoration of natural heritage. For a fuller description see page 22.

#### *Opportunities*

Article 21 (1)(f) supports the ...*maintenance, restoration and upgrading of the cultural and natural heritage of villages and rural landscapes*.... This could be an extremely valuable sub-measure to support the restoration of natural aquatic ecosystems and the restoration and/or creation of wilderness areas that require little or no management intervention, for example, peatbogs and river deltas, which have beneficial impacts on soil priorities. For this to be possible soil priorities would need to be explicitly mentioned in the RDP among the sub-measure objectives and beneficiaries should also include nature conservation bodies.

#### *Avoiding risks*

Given the broad scope of this measure there is the potential for it to be used to support investments that could result in environmental harm. Care should therefore be taken to ensure the investments supported under this measure are coherent with soil objectives and result in environmental additionality.

## Afforestation and creation of woodland (Art. 23)

### Key measure

#### *Measure description*

This measure provides support for the establishment and maintenance of woodland on both agricultural and non-agricultural land and combines two measures from the 2007-2013 programming period.

#### *Opportunities*

Support for the afforestation and creation of woodland can help to reduce soil erosion, particularly on steep slopes, by stabilising soil structure and making it less susceptible to landslip or run off. This measure can support the establishment of forest areas on both agricultural and non-agricultural land, and of shrubs and other perennial woody species on land where soil and climatic conditions are unsuitable for trees.

#### *Avoiding risks*

It is important to take account of local environmental conditions, such as risks of wildfire and to use locally adapted species. Care should also be taken in the choice and preparation of land for afforestation, to avoid damaging existing valuable habitats such as species-rich semi-natural grasslands and peatlands. Planting techniques should minimise soil disturbance, and intensive preparatory works should be avoided. Offers of support should be structured to retain the environmental benefits of public support for afforestation, for example by requiring maintenance beyond the initial establishment period.

## Establishment of agro-forestry systems (Art. 24)

### Key measure

#### *Measure description*

The measure provides support to establish agro-forestry systems and maintain them for up to three years. For a fuller description see page 23.

#### *Opportunities*

Research on the effect of the oak trees on soils in the *dehesa*, the most extensive traditional agroforestry system in Europe, showed that soil nearest the trees had higher levels of organic matter and available nutrients (Moreno *et al*, 2007). Introducing trees to more intensive arable crops have been shown to improve the stability and organic matter content of the soil (Dupraz *et al*, 2005), but care should be taken to ensure that agro-forestry systems are not established in areas they would cause negative impacts on areas of HNV farmland.

#### *Avoiding risks*

A risk in using this measure is that the potential soil benefits will only be partially realised, or there will be perverse environmental impacts. To avoid this nationally defined forest management standards should specify tree species indigenous to the bio-climatic zone, and extensive silvicultural management, particularly on vulnerable soils. Care should also be taken in the choice and preparation of land for agro-forestry, to avoid damaging existing soil types, in particular peatlands; intensive preparatory works, for example rock crushing, large scale ploughing and drainage, should also be avoided. Support should be structured to retain the environmental benefits of public support for agro-forestry, for example by requiring maintenance beyond the initial establishment period. For further risks in using this measure see the biodiversity section page 23.

## Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)

### Key Measure

#### *Measure description*

This measure provides support for land management operations that prevent or help to restore damage from natural disasters and catastrophic events in forests. The investments provided under this measure can support protective infrastructure, such as firebreaks and setting up monitoring activities.

#### *Opportunities*

Forest systems provide benefits to soils through stabilisation and renewal of organic matter. Where forests are damaged as a result of fire or extreme events, soils can be at risk of erosion or degradation. The greater emphasis on preventative actions and forest management plans in this measure can help to maintain existing forest areas which may be providing wider benefits to soil priorities, such as stabilisation and preventing erosion on slopes and bank sides, or increased soil organic matter content through the accumulation of leaf litter.

#### *Avoiding risks*

It should be recognised that naturally occurring catastrophic events, such as forest fires, are an important component of natural forest dynamics, and prevention and restoration efforts

should take this into account, particularly in HNV forests. Restoration and prevention actions should be evidence based and coherent with support provided for other environmental priorities and measures. There is also a risk that support under this measure could be provided without paying sufficient attention to the need to protect and enhance soil functionality.

#### **4.3.6 Other EAFRD measures than can indirectly support soil priorities**

This section describes other EAFRD measures that can contribute indirectly to soil priorities. **See also the discussion in Section 4.4 of crosscutting EAFRD measures supporting capacity building and delivery for all environmental priorities.**

### **Quality schemes for agricultural products and foodstuffs (Art. 17)**

#### **Supporting Measure**

##### *Measure description*

This measure provides reimbursement for the costs to farmers of participating in quality product certification schemes, including those that guarantee *specific farming or production methods*. Support is for a maximum of five years.

##### *Opportunities*

This reimburses the costs to farmers of participating in quality product certification schemes, including those which guarantee *specific farming or production methods*. Support is for a maximum of five years and could be particularly important in addressing any market failures from addressing soil priorities. For example, using environmental criteria to improve farm income by adding value to foodstuffs and other farm products from conservation management approaches, such as contour ploughing, avoiding growing crops on peat soils or limiting the use of inputs (fertilisers and PPPs).

##### *Avoiding risks*

Quality schemes could be developed that have little or no consideration for environmental priorities and may lead to the increased use of environmentally damaging production practices. Care should be taken to ensure the support provided under this measure results in the delivery of a wide range of public goods, including those for the environment, by ensuring environmental considerations are considered within the quality schemes.

### **Investments in new forestry technologies and in processing and marketing of forest products (Art. 27)**

#### **Supporting measure**

##### *Measure description*

This investment measure can be used to support new forest technologies, such as harvesting machinery, new processing methods and the marketing of new forest products.

##### *Opportunities*

Intensive forestry operations such as clear felling, the use of certain types of machinery, and fertilisation can all cause damage to forest soils. This measure, aimed at enhancing forest potential and adding value to forest products can be used to support soil friendly and modern harvesting machinery to prevent damage to the forest floor and reduce waste in the harvesting process. Care will be needed in delivering this measure to ensure that

improvements in forest technology and productivity avoid perverse environmental impacts on biodiversity, water and soils.

#### *Avoiding risks*

Care will be needed in delivering this measure to ensure that improvements in forest technology and productivity avoid perverse environmental impacts on soil priorities and that they are coherent with other priorities and measures in ensuring environmental additionality. Investments can also be used to support the production and marketing of new forest products such wood fuel, but care is required when extracting forest residues for energy production that a balance is maintained between the amount of wood and residues needed for extraction and the amount needed to maintain soil functionality, in particular organic matter content. Investments under this, and all measures, should ensure that there is environmental additionality.

### **Organic (Art. 30)**

#### **Supporting Measure**

#### *Measure description*

This land management measure, which provides support for both conversion to and maintenance of organic farming systems is now separate from the agri-environment-climate measure, but is similar in structure, with five to seven year agreements and provision for transaction costs in the payment calculations (including at 30 per cent for groups of farmers).

#### *Opportunities*

Organic farming can be used to increase soil organic matter content as well as improving overall soil functionality by encouraging crop rotation, the use of organic fertilisers and legumes and grass leys in the rotation.

#### *Avoiding risks*

Support under this measure can also be provided to farmers who operate relatively intensive organic production, particularly in the dairy and horticultural sectors. Care should be taken to ensure that public support is only provided to where there is environmental additionality, and that support is coherent with other priorities and measures, through clear prescriptions set out in the RDP. For additional risks of using this measure see the Biodiversity section pages 29 - 30.

In the current RDP in Sardinia support for organic farming has helped to cover the higher management costs involved with encouraging the rotation of fodder crops so that different crops grow in different fields each year and the inclusion of clover and other legumes which help to fix nitrogen and improve soil fertility.

### **Natura 2000 and Water framework directive payments (Art. 31)**

#### **Supporting Measure**

#### *Measure description*

This measure provides compensation payments for legal restrictions on farmland and forest management imposed by the national implementation of environmental regulations (the Habitats, Birds and Water Framework Directives (WFD)). For a fuller description see pages 25 – 26.

### *Opportunities*

The opportunities for delivering soil priorities using this measure are similar to those set out under the biodiversity (pages 25-26) and water (page 38) priorities. In particular benefits can be realised in both Natura 2000 and WFD designated areas on soils vulnerable to erosion and compaction. The management plans set out for Natura 2000 sites could be used to encourage beneficial soil management practices such as minimum tillage regimes or the maintenance or re-wetting of peat soils etc. This measure has relatively low transaction costs, can be paid at standardised rates to eligible farmers and foresters, and provides a basis for more targeted agri-environment-climate (Article 29), forest-environment (Article 35) and non-productive investment payments (Article 18), for example where specialist management is required. The combination of these measures can provide an added incentive for land managers to adopt environmentally beneficial management providing the combinations of measures are environmentally coherent and ensure additionality.

### *Avoiding risks*

There are relatively limited risks in applying this measure, other than those set out in the biodiversity section (pages 25 - 26) given the safeguards explicitly stated in the regulation (Article 31(4)) which are in line with the principle of environmental baseline, coherent use of funds and ensuring additionality. However, it is important for farmers and foresters to understand their role in meeting WFD and Natura 2000 obligations and how these benefit soil priorities, therefore care should be taken to ensure that they have the necessary technical capacity to undertake the required actions and understand the desired results. This can be facilitated in part through Articles 15 – 16.

## **Payments to and designation of areas facing natural or other specific constraints (Art. 32 – 33)**

***Supporting Measure***

### *Measure description*

This measure provides annual payments to compensate farmers for the additional costs and income foregone related to the natural constraints on agricultural production in the area concerned. For a fuller description see pages 30-31.

### *Opportunities*

This measure can help to prevent the intensification of unproductive carbon rich soils and maintain the economic viability of extensive farming systems using existing beneficial management practices. For a fuller description of opportunities provided by this measure, which are equally applicable to soil priorities, see the biodiversity section pages 30-31

### *Avoiding risks*

To be cost-effective, support under this measure should be targeted towards farm types that are most economically disadvantaged and of most environmental value. In the design of this measure it is important to consider if the support provided is coherent with other funds targeted at or available in these areas and that support is sufficient to take into account the full costs of continuing farming in such areas. As this measure does not have environmental management requirements attached (although it can be limited to certain types of farms) it will be important to use the measure as part of a package of measures targeted at soil management including Natura 2000/WFD (Article 31), agri-environment-climate (Article 29) and investment measures (eg Article 18). For further risks see the biodiversity section pages 30-31.

## CLIMATE CHANGE MITIGATION



### Priority environmental outcomes for climate change mitigation

- carbon sequestration and storage capacity of agricultural and forest land is improved;
- important carbon stores in vegetation and soils are protected (for example, in semi-natural grasslands and forest soils);
- emissions of carbon, nitrous oxides and methane from agricultural and forestry land management are reduced in total, particularly carbon emissions from previously drained peat soils; and
- efficiency of fuel use in agriculture and forestry is improved and reliance on fossil fuels reduced.

### EAFRD measures to deliver climate change mitigation priorities

- Agri-environment – climate (Art. 29)
  - Forest-environmental and climate services and forest conservation (Art. 35)
  - Investment in physical assets (Art. 18)
  - Basic services and village renewal in rural areas (Art. 21)
  - Afforestation and creation of woodland (Art. 23)
  - Establishment of agro-forestry systems (Art. 24)
  - Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)
  - Investments improving the resilience and environmental value of forest ecosystems (Art. 26)
- Key measures
- Quality schemes for agricultural products and foodstuffs (Art. 17)
  - Investments in new forest technologies and in processing and marketing of forest products (Art. 27)
  - Organic (Art. 30)
  - Natura 2000 and Water Framework Directive payments (Art. 31)
  - Payments to and designation of areas facing natural or other specific constraints (Art. 32 and Art. 33)
- Supporting measures

#### 4.3.7 Key EAFRD measures for climate change mitigation

The following measures have the potential to deliver environmental priorities for climate change mitigation by reducing greenhouse gas emissions and/or improving sequestration and storage of carbon. Climate change adaptation has been discussed under the sections on biodiversity, water and soil.

The scope and content of these measures has been described in the section on biodiversity priorities above, and is not repeated here. This section focusses on opportunities to deliver climate change mitigation priorities and also identifies any risks. Many of the measures and actions identified under soil priorities are also relevant here especially those that increase soil organic matter and improve sequestration capacity. Forestry measures are particularly important for climate change mitigation because of the potential to supply renewable energy and enhance carbon storage in vegetation (above and below ground) and in soils, when compared to agricultural land uses.

## **Agri-environment – climate (Art. 29)**

### **Key measure**

#### *Measure description*

Agri-environment-climate is a land management incentive measure with an annual payment per hectare for environmental management, with scope to target and tailor detailed management requirements to specific environmental priorities. For a description of the measure see pages 18 - 19.

#### *Opportunities*

This measure has the potential to deliver all the priority outcomes listed for climate change with the exception of greater fuel efficiency; however, the degree to which this is achieved will depend on the design of the measure at Member State level. For example, this measure can support management of permanent pastures and conversion of arable land to grassland. Other land management actions that can be supported under this measure to protect soil carbon content include reduced tillage, soil cover, unfarmed features, wetland management and reduced nitrate fertiliser usage.

Advice, information and training will be important in ensuring that this measure reaches its potential in delivering climate mitigation benefits.

#### *Avoiding risks*

One specific risk in using this measure, particularly to semi-natural grasslands (where existing livestock systems may be uneconomic) will come from the pressure to meet climate change objectives, for example by growing energy crops or short-rotation coppice, or afforesting this land. Care should be taken to ensure that support provided under this measure is used to deliver public goods and results in environmental additionality, this may include targeting actions to deliver carbon sequestration through the maintenance of semi-natural habitats, the re-wetting of peatland areas, or the adaptation of wildlife to climate change through improving the resilience of ecosystems and connectivity of habitats. There are several further risks to climate mitigation priorities in using this measure. Where 'entry-level' or less-demanding agri-environment-climate schemes are used to achieve broad coverage, there is a risk of deadweight and loss of additionality. This can be minimised through the effective use of targeting and differentiation of management requirements in specific areas or towards climate mitigation priorities (eg the maintenance of scrub or permanent grass areas). It is essential that the intervention is based on sound evidence and that it is targeted at the appropriate land. This can be helped by farmer advice and training but may also require allocation of additional resources to the delivery process, especially where farmers are unfamiliar with the climate mitigation priorities.



## Forest-environmental and climate services and forest conservation (Art. 35)

### Key measure

#### *Measure description*

Forest-environment-climate is a land management incentive measure with an annual payment per hectare for environmental management, with scope to target and tailor detailed management requirements to specific environmental priorities. For a description of the measure see pages 20 - 21.

#### *Opportunities*

Opportunities to support climate mitigation priorities using this measure are very broad. As described above, the measure can be used to support specific and targeted land management operations that could be tailored towards meeting mitigation priorities. For example, improvements in forest stand structure, continuous cover forestry, and sustainable timber extraction. This measure can be combined with other measures, such as investments to improve the environmental value of forests (Article 26) or non-productive investments (Article 18(1)(d)) to help improve the delivery of both adaptation and mitigation priorities. The precise combination of measures and management operations used will depend on the desired outcomes and the management location.

#### *Avoiding risks*

Given the broad scope of this measure to address a range of environmental priorities through detailed and targeted management operations there is a risk that climate mitigation priorities could be negatively affected by management for other priorities. Care should therefore be taken to ensure the use of this measure is coherent with other priorities and measures, is evidence based and delivers environmental additionality. The more generic risks to using this measure are described in the biodiversity section on pages 20 - 21.

## Investment in physical assets (Art. 18)

### Key measure

#### *Measure description*

Investment in physical assets is a broad measure supporting investments that range from improving agricultural performance to processing, marketing and development of products, and infrastructure improvements, plus non-productive investments linked to the achievement of agri- and forest environment commitments. For a fuller description of Article 18(1)(d) relating to agri-and forest- environment commitments see pages 21 - 22.

#### *Opportunities*

Investments can support *infrastructure related to the development and adaptation of agriculture, including energy supply*. In meeting the priority outcomes for climate change, this measure is of particular relevance to agricultural investment in improving energy efficiency, and to non-productive investments linked to agri-environment-climate payments for reducing carbon emissions by rewetting drained peatland soils.

#### *Avoiding risks*

The scope of this measure is particularly broad and could, if inappropriately designed, be used to support investments that are required as part of national and EU legislation or

where there is a clear market reward. When using this measure particular attention should be paid to the principle of ensuring environmental additionality. Support should be based on sound evidence and care taken to ensure that any investments made provide a balanced approach across different environmental priorities.

### **Basic services and village renewal in rural areas (Art. 21)**

### **Key measure**

#### *Measure description*

This investment measure covers a wide range of potential support from Natura 2000 management plans to broadband infrastructure, building conservation and restoration of natural heritage. For a fuller description see page 22.

#### *Opportunities*

This measure can support small-scale investments in renewable energy as part of a local development plan. Support under this measure can also be provided for restoring and creating natural areas, in particular wetlands and wooded habitats, which in turn can provide carbon sequestration benefits. For more detail, see the biodiversity section page 22.

#### *Avoiding risks*

Given the broad scope of this measure there is the potential for it to be used to support investments that could result in environmental harm. For example, support could be provided for certain infrastructure that leads to energy inefficiencies or the increased release of Greenhouse Gas (GHG) emissions. Care should therefore be taken to ensure the investments supported under this measure are coherent with climate mitigation priorities, result in environmental additionality and deliver environmental public goods.

### **Afforestation and creation of woodland (Art. 23)**

### **Key measure**

#### *Measure description*

This measure provides support for the establishment and maintenance of woodland on both agricultural and non-agricultural land and combines two measures from the 2007-2013 programming period.

#### *Opportunities*

Afforestation of agricultural land can dramatically increase the long-term carbon sequestration capacity of the land (but note that this measure does not support fast growing trees for energy production or short rotation coppice). It is important to avoid afforestation of land that already has a greater sequestration capacity than forest cover, such as peatland, and to consider when planning the forest the long-term balance between the two objectives of carbon storage in trees and soils, and harvesting trees for renewable energy. At present EU forests are a carbon 'sink', storing more carbon than they produce, but meeting EU renewable energy targets could increase by a factor of two or three the demand for biomass from agriculture and forests. If fellings exceed annual growth forests can become a source of carbon.

### *Avoiding risks*

The risks of using this measure are relatively limited for the climate mitigation priorities however there are potential risks for other objectives. Care should therefore be taken to ensure support is coherent with other priorities and in line with other measures. For a more detailed description of additional risks posed on other objectives see the biodiversity (page 27), water (page 36) and soil (page 45) sections.

## **Establishment of agro-forestry systems (Art. 24)**

**Key measure**

### *Measure description*

The measure provides support to establish agro-forestry systems and maintain them for up to three years. For a fuller description see page 23.

### *Opportunities*

The introduction of trees into agricultural cropping systems will improve the overall carbon sequestration capacity of the land (Dupraz *et al*, 2005) and also help climate change adaptation by providing shelter for both crops and livestock in areas experiencing increased temperature and scarce water. The EU Forest Strategy<sup>22</sup> emphasises the importance of agroforestry for carbon sequestration. Care should be taken with peatland soils where drainage should be avoided and re-wetting previously drained soils is the best option to conserve remaining carbon stocks and improve sequestration capacity.

### *Avoiding risks*

The risks of using this measure are relatively limited for the climate mitigation priorities; however, there are potential risks for other objectives, in particular for soils (see page 46). Care should therefore be taken to ensure support is coherent with other priorities and in line with other measures. For a more detailed description of additional risks posed to other objectives see the biodiversity (page 23) and water (page 36) sections.

## **Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events (Art. 25)**

**Key measure**

### *Measure description*

This measure provides support for land management operations that prevent or help to restore damage from natural disasters and catastrophic events in forests. The investments provided under this measure can support protective infrastructure, such as firebreaks through to the setting up of monitoring activities.

### *Opportunities*

Forest fires not only increase carbon emissions as a result of the fire but can also damage the carbon sequestration and storage capacity of the forest resource and soils for decades. Reducing fire risk is therefore an important management priority both economically and environmentally. This measure supports protective infrastructure (such as firebreaks), monitoring and communication, and forest restoration after fire.

---

<sup>22</sup> COM(1998) 649, 03/11/1998

### *Avoiding risks*

It should be recognised that naturally occurring catastrophic events, such as forest fires, are an important component of natural forest dynamics, and prevention and restoration efforts should take this into account, particularly in HNV forests. Restoration and prevention actions should be evidence based and coherent with support provided for other environmental priorities and measures.

## **Investments improving the resilience and environmental value of forest ecosystems (Art. 26)**

### *Key measure*

### *Measure description*

This measure supports investments undertaken for environmental aims or providing ecosystem services and/or which enhance the public amenity value of forest and wooded land in the area concerned, or improve the climate change mitigation potential of ecosystems. Unlike Article 18(1)(d) this measure has no requirement for forest environmental investments to be non-productive. For a fuller description see page 24.

### *Opportunities*

This measure complements the non-productive investments under Article 18 by supporting investment that enhances the climate change mitigation potential of forest ecosystems *without excluding economic benefits in the long-term*. For example, these could include the replanting of non-native species with native varieties that are more resilient to the environment and provide increased carbon sequestration benefits or greater wood harvesting potential.

### *Avoiding risks*

The risks of this measure are greater than those of the non-productive investment measure, simply because of its wider environmental scope, which creates the risk of conflict between different environmental priorities. It will be important to apply the principle of coherent use of EU funds with no perverse environmental effects. For example, if this measure is used to support silvicultural techniques and tree species chosen only for their contribution to climate change mitigation through fast growth rate and carbon sequestration capacity (for example, *Eucalyptus* spp) there are likely to be adverse impacts on biodiversity, water and fire risks. Investment in infrastructure for tourism should be planned to avoid damaging valuable habitats or increasing disturbance of important species.

### **4.3.8 Other EAFRD measures than can indirectly support climate change mitigation**

This section describes other EAFRD measures that can contribute indirectly to climate change mitigation priorities. **See also the discussion in Section 4.4 of crosscutting EAFRD measures supporting capacity building and delivery for all environmental priorities.**

## Quality schemes for agricultural products and foodstuffs (Art. 17)

### Supporting Measure

#### *Measure description*

This measure provides reimbursement for the costs to farmers of participating in quality product certification schemes, including those that guarantee *specific farming or production methods*. Support is for a maximum of five years.

#### *Opportunities*

Support could be targeted at addressing any market failures to deliver climate mitigation priorities. For example, products could be marketed in relation to their carbon footprint.

#### *Avoiding risks*

Quality schemes could be developed that have little or no consideration for environmental priorities and may lead to the increased use of environmentally damaging production practices. Care should be taken to ensure the support provided under this measure results in the delivery of a wide range of public goods, including those for the environment, by ensuring environmental considerations are considered within the quality schemes.

## Investments in new forestry technologies and in processing and marketing of forest products (Art. 27)

### Supporting measure

#### *Measure description*

This investment measure can be used to support new forest technologies, such as harvesting machinery, new processing methods and the marketing of new forest products.

#### *Opportunities*

Investments can also be used to support the production and marketing of new forest products such as waste wood and harvesting residues for energy production. This can help to deliver climate mitigation priorities both within and outwith the forestry sector by promoting renewable energy sources.

#### *Avoiding risks*

Care will be needed in delivering this measure to ensure that improvements in forest technology and productivity avoid perverse environmental impacts on climate mitigation priorities and that they are coherent with other priorities and measures in ensuring environmental additionality. Investments can also be used to support the production and marketing of new forest products such as wood fuel, but care is required when extracting forest residues to avoid possible indirect negative impacts on carbon storage in forest litter and soils. Investments under this measure, should ensure that there is environmental additionality.

## Organic (Art. 30)

### Supporting Measure

#### *Measure description*

This land management measure, which provides support for both conversion to and maintenance of organic farming systems is now separate from the agri-environment-climate measure, but is similar in structure, with five to seven year agreements and provision for

transaction costs in the payment calculations (including at 30 per cent for groups of farmers).

#### *Opportunities*

Organic farming helps to increase soil organic matter content as well as improving overall soil functionality by encouraging crop rotation, the use of organic fertilisers and legumes and grass leys in the rotation.

#### *Avoiding risks*

Support under this measure can also be provided to farmers who operate relatively intensive organic production, particularly in the dairy and horticultural sectors that may deliver fewer climate mitigation priorities than more extensive organic management. Care should be taken to ensure that public support is only provided to reward public goods where there is a market failure and ensure support is coherent with other priorities and measures through prescriptions set out in the RDP. This can in part be facilitated by increasing the awareness and technical capacity of land managers in carrying out organic management. For additional risks of using this measure see the Biodiversity section pages 29 - 30.

### **Natura 2000 and Water framework directive payments (Art. 31)**

### **Supporting Measure**

#### *Measure description*

This measure provides compensation payments for legal restrictions on farmland and forest management imposed by the national implementation of environmental regulations (the Habitats, Birds and Water Framework Directives (WFD)). For a fuller description see pages 25 – 26.

#### *Opportunities*

The climate mitigation opportunities provided by this measure are similar to those available for soil priorities (see page 49). In particular these include the potential to focus Natura 2000 management plans on mitigation priorities through the maintenance and restoration of semi-natural habitats such as peatlands.

#### *Avoiding risks*

There are relatively limited risks in applying this measure, other than those set out in the biodiversity section (pages 25 - 26) given the safeguards explicitly stated in the regulation (Article 31(4)) which are in line with the principle of observing the environmental baseline, coherent use of funds and ensuring additionality. However, it is important for farmers and foresters to understand their role in meeting WFD and Natura 2000 obligations and how these benefit soil priorities, therefore care should be taken to ensure that they have the necessary technical capacity to undertake the necessary actions and understand the required results. This can be facilitated in part through Article 15 – 16.

## Payments to and designation of areas facing natural or other specific constraints (Art. 32 – 33)

### Supporting Measure

#### *Measure description*

This measure provides annual payments to compensate farmers for the additional costs and income foregone related to the natural constraints on agricultural production in the area concerned. For a fuller description see pages 30-31.

#### *Opportunities*

Similar opportunities are available under this measure for climate mitigation priorities as for biodiversity priorities, particularly where support is provided in areas that would otherwise undergo intensification of agricultural production with the consequential impacts on soils and semi-natural vegetation. This measure can help to prevent the intensification of unproductive carbon rich soils and maintain the economic viability of extensive farming systems using existing beneficial management practices. For a fuller description of opportunities provided by this measure, which are equally applicable to soil priorities, see the biodiversity section pages 30-31

#### *Avoiding risks*

To be cost-effective, support under this measure should be targeted towards farm types that are most economically disadvantaged and of most environmental value. In the design of this measure it is important to consider if the support provided is coherent with other funds targeted at or available in these areas and that support is sufficient to take into account the management and maintenance costs faced in such areas. As this measure does not have environmental management requirements attached (although it can be limited to certain types of farm) it will be important to use the measure as part of a package of measures targeted at water management including Natura 2000/WFD (Article 31), agri-environment-climate (Article 29) and investment measures (eg Article 18). For further risks see the Biodiversity section pages 30-31.

#### 4.4 Cross-cutting EAFRD measures that support capacity building and delivery

The environmental impact of EAFRD measures for land management and investment depends not just on careful scheme design and targeting but also on the level of uptake by farmers and foresters and the way in which they implement the land management. This in turn depends first on their knowledge of the options available and second on their capacity to carry out the requirements in terms of technical knowledge, understanding and administrative ability.

The following cross-cutting EAFRD measures support the delivery of all environmental priorities in three ways: by increasing the knowledge, understanding, awareness and capabilities of land managers and their advisors; by helping producers to achieve market benefits of environmental production methods; and by encouraging cooperation, innovation and locally led delivery which involves a wide variety of stakeholders.

Cross cutting measures can be used on their own, but deliver more effective results when used together with other land management and investment measures.

##### **Knowledge transfer and information actions (Art. 15)**

##### ***Cross cutting measure***

###### *Measure description*

The cost of providing information, vocational training, demonstrations, farm visits and farm exchanges are covered by this measure, together with the participants' costs of attending these events. This measure now covers farm visits and farm management exchanges, which could be used to help to engage land managers in delivering benefits that are difficult to achieve at a farm scale and require landscape scale intervention; for example habitat networks or managing an extensive area of HNV farming or forestry for biodiversity. The measure also covers the costs of demonstration projects and could be used to support demonstration projects with an environmental focus.

###### *Opportunities*

For the environmental measures, training and information exchange can be tailored to support any combination of measures at any degree of detail, with the overall objective of improving land managers' ability to deliver the objectives of EAFRD support, for example through agri-environment-climate, forest-environment and Natura 2000 management. This measure has greatest potential where used in conjunction with land management measures where knowledge transfer and information is tailored towards the needs of a specific scheme or project.

The effectiveness of the measure depends on the quality and expertise of those providing training and how they engage and communicate with land managers. Care should be taken to ensure that those providing the advice have the necessary technical capacity and expertise to do so. This potentially could include nature conservation organisations, other NGOs, and existing farmers who already deliver advice on a voluntary basis and provision does not have to be restricted to managing authorities or public bodies.



### *Avoiding risks*

The advice and knowledge transfer provided under this measure could be used to support environmentally damaging practices including methods to intensify production of grassland or forest areas. The design of the RDP should ensure that this measure results in environmental additionality, supports the delivery of environmental public goods, and results in no net environmental harm.

In Romania, support for semi-subsistence farmers is important for maintaining HNV farming in remote areas. One of the key supporting measures is mandatory professional training that incorporates the protection of biodiversity. Whilst this helps farmers to protect local biodiversity, it is felt that this support, particularly the training element, needs a stronger environmental component to it.

## **Advisory services, farm management and farm relief services (Art. 16)**

### *Cross cutting measure*

### *Measure description*

This provides EAFRD support to deliver advisory services more widely to farmers, foresters and small businesses, both as individuals and in groups. In comparison to the current programming period, the environmental scope of this measure has been broadened to reflect the new environmental priorities of the EAFRD including a strong focus on the sustainable economic development of small farms. The measure has been expanded to cover advice for Small and Medium sized Enterprises (SMEs) and to promote training of advisors.

### *Opportunities*

The minimum requirements include the provision of advice on the regulatory baseline, including, for farmers, cross-compliance conditions and for foresters, the Habitats, Birds and Water Framework Directives. In addition, biodiversity, climate mitigation, water and soil objectives are explicitly mentioned among the topics for which advice can be provided. This, together with the encouragement in the agri-environment-climate measure for Member States to provide beneficiaries with the knowledge and information they need, is a strong steer towards broadening the environmental scope and content of the current Farm Advisory Services. It provides an opportunity to inform both farmers and their advisors about the socio-economic and environmental benefits of agri-environment-climate management, HNV farming and Natura 2000. The delivery of environmental public goods through farm and forest management needs to be incorporated in all training of advisors to ensure this challenge is properly understood.

Furthermore Article 16(4)(d) makes reference to the greening requirements beneficial to climate and the environment under the proposals for the direct payment regulation (COM(2011)625/3). It will be particularly important for land managers and advisors to be clear where environmental management is required as part of the baseline requirements and where it can be supported using public money through the EAFRD. Advisors and Member State managing authorities should ensure the choice of appropriate Pillar 1 and Pillar 2 support to deliver environmental outcomes, and that the latter is delivered at a level above that required in the baseline.

Care should be taken to ensure that those providing the advice have the necessary technical capacity and expertise to do so. This potentially could include nature conservation organisations, other NGOs, and existing farmers who already deliver advice on a voluntary basis and does not have to be restricted to managing authorities or civil bodies.

The advice and knowledge transfer provided under this measure could be used to support environmentally damaging practices including intensification of HNV grassland or forest areas. The design of the RDP should ensure that this measure results in environmental additionality, supports the delivery of environmental public goods, and results in no net environmental harm.

## **Farm and business development (Art. 20)**

## **Cross cutting measure**

### *Measure description*

This measure includes business start-up aid for small farms and investment in non-agricultural activities.

### *Opportunities*

Although there is no specific mention of environmental priorities this support could, if carefully targeted as part of a package of measures, help land managers diversify their incomes and help maintain the economic viability of HNV farms in vulnerable areas.

### *Avoiding risks*

Given that 'environment' is not mentioned specifically there is a risk that this measure could be used to support development that runs counter to environmental objectives. Care should be taken to ensure that this measure is used to support environmental public goods, is coherent with other measures and CAP funds and results in environmental additionality.

Farm and business development can be an essential tool for supporting small holdings and semi-subsistence farms. Such holdings have integrated management systems that deliver multiple environmental benefits due to the low intensity of farming.

An example of this can be found in the current Romanian Rural Development Programme for supporting semi-subsistence agricultural holdings. Although the measure does not have any explicit environmental objectives, it does target farmers within Natura 2000 sites, high nature value areas and farmers receiving agri-environment payments. The purpose of the measure is to support these farms in gaining greater incomes through diversification and reduced production costs. Beneficiaries receive training and are required to present a business plan to transform their holdings into viable businesses.

This support is critical for the continued integrated production and management of such areas which are often at risk of abandonment or being taken over for intensive production.

## Setting up of producer groups (Art. 28)

### Cross cutting measure

#### *Measure description*

Support under this measure can be provided to farmers and foresters to set up producer groups, adopting different production practices, establishing common rules on production information and placing goods on the market.

#### *Opportunities*

Similar to Article 17 support under this measure for setting up producer groups for farm or forest products could help smaller businesses enjoy the benefits of economy of scale in marketing environmentally sustainable produce. This has the potential to benefit all environmental priorities.

A successful example from the current RDP in Sardinia is Mr Loche's free range Limousine cattle enterprise which has helped support the viability of his family business and led in part to him playing a lead role in setting up a new producers group for organic food businesses from Sardinia. This helps to promote the sale of a wider variety of local organic products across a larger number of market outlets.

## Co-operation (Art. 36)

### Cross cutting measure

#### *Measure description*

This measure has been significantly expanded, and provides a very flexible instrument to foster co-operation and innovation from a local to a transnational level. There is a new focus on environmental projects, management plans, and pilot schemes. It covers both agriculture and forestry, and encourages the co-operation and engagement of a wide range of actors in the supply chain. Support covers preliminary studies, preparation of management plans, and facilitation and implementation of projects, and the initial seven-year period may be extended in the case of collective environmental projects.

#### *Opportunities*

Many environmental priorities require support and management at the wider landscape scale, for example many bird species and other wildlife, especially during the breeding season, require different resources such as nesting sites, feeding areas and water, and therefore exploit large areas, going well beyond the boundaries of individual farms. The effective management of Natura 2000 sites and other protected areas requires joint action between different types of land managers (farmers, forest owners, public authorities managing public land). Equally, environmentally damaging land management practices can often affect large areas, such as in the case of water pollution, and may require coordinated action beyond the scale of individual farms. The use of this measure in combination with appropriate targeting and delivery at the necessary landscape scale can help to ensure the appropriate management is in place to meet environmental priorities.

This measure could also be of particular value in environmentally important areas at risk of economic decline to promote environmental management and economic regeneration.

### *Avoiding risks*

The support provided under this measure could be used to support environmentally damaging practices including intensification of HNV grassland or forest areas. The design of the RDP should ensure that this measure results in environmental additionality, support the delivery of environmental public goods, and result in no net environmental harm.

An example of cooperation at a national level can be seen in the Netherlands under the current programming period where collective contracts were introduced for agri-environment applicants. The purpose of these collective contracts was to improve communication between farmers and raise their environmental awareness to strengthen their capacity to deliver environmental benefits through shared best practice. This approach was also viewed as a more cost effective means of delivering agri-environment objectives. These collective contracts resulted in multiple benefits for biodiversity, in particular for local species such as the hamster and meadow birds and also for landscape features.

A criticism of cooperation between farmers is the possible additional administrative burden. This should be considered when using this measure.

## **LEADER (Art. 42-45)**

### ***Cross cutting measure***

### *Measure description*

The LEADER approach incorporates locally driven public-private partnerships, capacity building and targeted management and because of this has particular potential to deliver biodiversity benefits. This measure now allows Leader Local Actions Groups (LAGs) to carry out *tasks delegated to them by the Managing Authority*, which opens up the possibility of local delivery of targeted environmental measures. It has been recognised in the current programming period that capacity building is critical for the LEADER approach, and this measure now covers the cost of a LEADER start-up kit, capacity building, training and networking.

### *Opportunities*

The LEADER approach offers a greater degree of local autonomy and flexibility to address both environmental and socio-economic issues than is possible with the conventional 'top-down' delivery of EAFRD support, particularly where LEADER is used in combination with other land management measures to deliver environmental priorities. This can be beneficial in certain situations where top down approaches are impractical, where environmental projects are driven by local communities and stakeholders, or where it is particularly important to engage a range of local actors in the delivery of environmental benefits. The new thematic structure of EAFRD provides greater encouragement for LEADER groups to engage with land management activities, in contrast to the current period where LEADER activity was sometimes confined to delivery of Axis 3 measures. Care should be taken to ensure that this measure is supported through the use of advice and that the projects result in environmental additionality.

### *Avoiding risks*

Given that the wide scope of the LEADER approach and that to date its use in delivering environmental priorities has been relatively limited, care should be taken to ensure that land managers and delivery agencies have the necessary technical capacity to carry out the land management operations necessary to achieve results. This can be in part facilitated

through greater advice and support through Articles 15 and 16 as well as using LEADER in combination with other land management measures such as agri- and forest- environment climate measures (Article 29 and Article 35). The LEADER approach should also be coherent with other support provided through the EAFRD measures.

Two examples of how LEADER and Local Action Groups (LAG) can support the cross-cutting environmental priorities discussed here can be seen in Poland with the current programming period.

- Kraina Łęgów Odrzańskich: This LAG supports small local projects that maintain and conserve marshland and wetland in protected areas, particularly those that fall within Natura 2000 sites. Local citizens partake in the planning and management.
- Wrzosowa Kraina: This LAG maintains and conserves a local site of environmental importance due to the heather growing there. This LAG provides training, school lessons and communication activities to preserve the area. It also supports local tourism by introducing walking paths to the area.

Whilst both of these local initiatives provide multiple benefits for the local environments, most LAGs in Poland do not focus on nature protection. A lesson learnt from this programming period in Poland is that LEADER must be used more widely for the provision of nature conservation.

## European Innovation Partnership (EIP) (Art. 61)

### Cross cutting measure

#### *Measure description*

This is a new initiative for agricultural productivity and sustainability aimed at rebuilding broken links in the chain between research and bringing innovation to the market. As Mr Georg Häusler, EU Agricultural Commissioner Dacian Cioloş' Chef de Cabinet, described it "the basic difficulty seems to be that scientists are doing science somewhere in the corner and farmers are asking for something, but the scientists do not know what the farmers want and the farmers do not know what science does. This is why we launched the European Innovation Partnership" (Matthews, 2011).

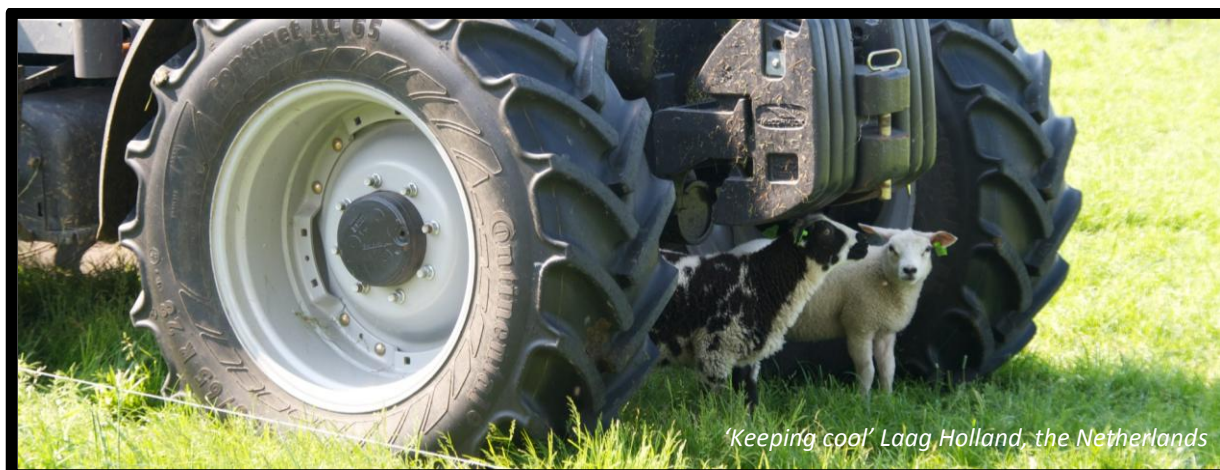
#### *Opportunities*

The EAFRD funding can support EIP operational groups set up by *interested actors such as farmers, researchers, advisors and businesses involved in the agriculture and food sector*, which will plan and implement innovative projects and disseminate the results. The remit of EIP specifically includes promoting a climate friendly and resilient agriculture and improving processes to preserve the environment. This offers significant opportunities to test evidence-based environmental land management projects, for example new products and processes from HNV farming or new crops for drained peatland soils that have been rewetted to reduce carbon emissions.

#### *Avoiding risks*

Given the scope of the EIP there is potential for this measure to be focussed on activities and innovation that result in environmental harm. Care should therefore be taken to ensure that activities supported under this measure are used to provide public goods where there is a market failure and result in environmental additionality. The design of this measure should be used coherently with other measures and CAP funds and result in no net environmental harm.

## 5 CONCLUDING REMARKS



This document has set out a series of environmental priorities and priority outcomes in line with the broad environmental objectives of the EAFRD and the other CSF funds (Section 2). It has further set out a series of integrated principles to guide the use of EAFRD support and the development and implementation of RDPs (Section 3). These principles and priorities have been brought together in Section 4 to highlight, priority by priority, the potential opportunities for using the different measures under the proposed EAFRD and how to minimise any associated risks.

The proposed EAFRD provides the overall structure on which Member States can build and develop their Rural Development Programmes to deliver the environmental priorities relevant to their territories and in a way that fits with their cultural, agriculture and forestry situation. This document is based on draft legislative proposals and care should therefore be taken to take account of revisions that take place before the finalisation of the legal texts.

The many changes proposed by the current CAP reforms also bring with them significant opportunities. For example, the inclusion of some land management actions under Pillar 1 greening, if done effectively, offers the opportunity for agri-environment funding to deliver greater environmental benefits. However, realising these opportunities will not be easy and maintaining a focus on environmental priorities will remain a significant challenge particularly in relation to economic and production driven pressures. This will require managing authorities to engage with a wide range of stakeholders, including the farming and forestry communities in the design of their RDPs. The aim should be to increase awareness of the importance of environmental management beyond just the environmental priorities set out here, as well as to understand the needs of these stakeholders and how they can deliver innovatively environmental priorities.

The principles and priorities set out in this document are offered as a guide in this process, to highlight some of the opportunities in the proposed EAFRD and suggest how risks can be avoided. This is not a definitive list and is instead intended to provoke innovation and enable Member States and regional authorities to safeguard Europe's rural environment now and for the future.

## 6 BIBLIOGRAPHY

This bibliography includes all references cited in the text. In addition further reading material, prefixed with \*, has been suggested which may prove helpful to Member State and regional managing authorities in reflecting environmental principles and priorities in the design of RDPs and the development of associated schemes.

---

Barnes A P, Schwarz G, Keenleyside C, Thomson S, Waterhouse T, Poláková, J, Stewart S and McCracken D (2011) *Alternative payment approaches for non-economic farming systems delivering environmental public goods*. Final Report for Scottish Natural Heritage, Scottish Environment Protection Agency, Countryside Council for

Bengtsson J, Ahnstrom J and Weibull A (2005) The effects of organic agriculture on biodiversity and abundance: A meta-analysis. *Journal of Applied Ecology*. **42** pp261-269.

\*Birdlife (2009) Could do better: How is Rural Development policy delivering for biodiversity

\*Birdlife (2009) Through the green smokescreen: How is CAP cross compliance delivering for biodiversity?

\*Birdlife, Butterfly Conservation, Vogelbescherming (2011) Seeds of Success: How agri-environment can yield results for nature and farming

Burgess P J, Seymour I, Piper R, Incoll L D, Reynolds F, and Hart B (2004) *Effects of silvoarable management practices in the UK on ground-active invertebrates*. In: Book of Abstracts, 1st World Congress of Agroforestry. p111. 27 June-2 July 2004. University of Florida, Florida, USA.

Cooper T, Hart K and Baldock D (2009) *The Provision of Public Goods Through Agriculture in the European Union*, Report Prepared for DG Agriculture and Rural Development, Contract No 30-CE-0233091/00-28, Institute for European Environmental Policy: London.

Dupraz C, Burgess P, Gavaland A, Graves A, Herzog F, Incoll L, Jackson N, Keesman K, Lawson G, Lecomte I, Liagre F, Mantzanas K, Mayus M, Moreno G, Palma J, Papanastasis V, Paris P, Pilbeam D, Reisner Y, Vincent G, Werf Van der W (2005) *Synthesis of the Silvoarable Agroforestry For Europe project*. INRA-UMR System Editions, Montpellier, 254pp

European Court of Auditors (2010) Implementation of the LEADER approach for rural development. Special Report No 5. Luxembourg.

European Environment Agency (2010) 10 messages for 2010; forest ecosystems. Environment Agency, Copenhagen.

\*ENRD (2012) The European Network for Rural Development web based information resource acts as a knowledge sharing and information exchange across rural Europe. The website includes information on the use of all rural development measures across the EU, information sheets, project databases and discussion forums. For more information visit: [http://enrd.ec.europa.eu/policy-in-action/en/policy-in-action\\_en.cfm](http://enrd.ec.europa.eu/policy-in-action/en/policy-in-action_en.cfm)

ENRD (2010) Thematic Working Group 3 - Public goods and public intervention: *Conceptual framework on public goods provided through agriculture in the EU*. European Network for Rural Development

European Commission (2010) Communication from the Commission: Europe 2020 - A strategy for smart, sustainable and inclusive growth. COM(2010)2020 final.

Franks J R and McGloin A (2006) *Co-operative Management of the Agricultural Environment*. Report 0009 for the Rural Economy and Land Use (RELU) Programme. University of Newcastle, UK.

Graves A R, Burgess P J, Palma J H N, Herzog F, Moreno G, Bertomeu M, Dupraz C, Liagre, F., Keesman K, van der Werf W, Koeffeman de Nooy A and van den Briel J P (2007) Development and application of bio-economic modelling to compare silvoarable, arable and forestry systems in three European countries. *Ecological Engineering* **29**: 434-449.

Keenleyside C and Baldock D (2007) *Background paper to 'The Relationship between the CAP and Biodiversity'*. Outcome of an international seminar in Warsaw, Poland 7 – 8 December 2006. The Common Agricultural Policy and Farmland biodiversity in an enlarged EU. DLG Government Service for Land and Water Management, Utrecht The Netherlands.

Keenleyside C and Oppermann R (2009) 'A farmer-centred approach to managing and maintaining High Nature Value grasslands in Europe', in Veen, P., Jefferson, R., de Smidt, J. and van der Straaten J. (eds) *Grasslands in Europe of High Nature Value*, Zeist, The Netherlands, KNNV Publishing.

\*Keenleyside C, Allen B, Hart K and Baldock D (2011) Design and Implementation of Agri-environmental Policy Mechanisms: Are Guidelines Feasible? Background paper to the OECD Workshop on the Evaluation of Agri-environmental Policies 20-22 June 2011 The Johann Heinrich von Thünen Institute, Bundesallee 50, 38116 Braunschweig, Germany. Institute for European Environmental Policy: London.

Keenleyside C, Allen B, Hart K, Menadue H, Stefanova V, Prazan J, Herzon I, Clement T, Povellato A, Maciejczak M and Boatman N (2011) *Delivering environmental benefits through entry level agri-environment schemes in the EU*. Report Prepared for DG Environment, Project ENV.B.1/ETU/2010/0035. Institute for European Environmental Policy: London.

Kristensen L and Primdahl J (2006) *The Relationship Between Cross Compliance and Agri-environment Schemes*. A Research Paper of the Cross Compliance Network. Deliverable 13. [http://www.ieep.eu/assets/585/D13\\_Cross\\_compliance\\_and\\_agri-environment\\_schemes.pdf](http://www.ieep.eu/assets/585/D13_Cross_compliance_and_agri-environment_schemes.pdf)

\*LUPG (2009) *Securing our Common Future through Environmental Sustainable Land Management*

Matthews A (2011) The future role for the European Innovation Partnership for agricultural productivity and sustainability. <http://capreform.eu/the-future-role-for-the-european-innovation-partnership-for-agricultural-productivity-and-sustainability/> Accessed: 20 July 2012

Moreno G, Obrador J J, Garcia A (2007) Impact of evergreen oaks on soil fertility and crop production in intercropped dehesas. *Agriculture, Ecosystems and Environment* **119(3-4)** pp270-280



Palma J, Graves A R, Burgess P J, van der Werf W & Herzog H (2007) Integrating environmental and economic performance to assess modern silvoarable agroforestry in Europe. *Ecological Economics* **63**: 759-767.

Parkyn S (2004) *Review of Riparian Buffer Zone Effectiveness MAF Technical Paper No: 2004/05*. Prepared for MAFF. ISBN No: 0-478-07823-4 ISSN No: 1171-4662

Poláková J, Tucker G, Hart K, Dwyer J and Rayment M (2011) *Addressing biodiversity and habitat preservation through measures applied under the Common Agricultural Policy. Report Prepared for DG Agriculture and Rural Development, Contract No. 30-CE-0388497/00-44*. London: Institute for European Environmental Policy.

\*RSPB, Birdlife, EFNCP (2011) High Nature Value Farming: How diversity in Europe's farm systems delivers for biodiversity

Seufert V, Ramankutty N and Foley J A (2012) Comparing the yields of organic and conventional agriculture. *Nature*. **485** pp229-232

Stockan J A, Langan S J, and Young M R (2012) Investigating Riparian Margins for Vegetation Patterns and Plant–Environment Relationships in Northeast Scotland. *Journal of Environmental Quality*. **41** pp364–372

\*Tucker G M and McConville A J (2012) Guidance on management of farmland in Natura 2000 areas. Background report 1: Link between Natura 2000 and farmland. Final report to the European Commission, DG Environment, under contract ENV.B.3/SER/2010/0041. Institute for European Environmental Policy, London.

\*Underwood E, McCormack C, McConville A J and Tucker G M (2012) Guidance on management of farmland in Natura 2000 areas. Background report 2: Key management and policy measures for Natura 2000 farmland. Final report with annexes to the European Commission, DG Environment, under contract ENV.B.3/SER/2010/0041. Institute for European Environmental Policy, London.

Wheater H, Reynolds B, McIntyre N, Marshall M, Jackson B, Frogbrook Z, Solloway I, Francis O and Chell J (2008) *Impacts of upland land management on flood risk: multi-scale modelling methodology and results from the Pontbren experiment*. Manchester, Flood Risk Management Research Consortium, 126pp. (FRMC Research Report UR16, CEH Project Number: CO2699)

WWF, LUPG and SNM (2005) *Rural Development Environmental Programming Guidelines*. A Manual based on the findings of the Europe's Living Countryside (ELCo) project. 75pp

## **ANNEX 1: THE COMMON STRATEGIC FRAMEWORK 2014 TO 2020 - KEY ACTIONS FOR EAFRD ON ENVIRONMENT, RESOURCE EFFICIENCY AND CLIMATE CHANGE**

Taken from SWD(2012) 61 final Part II

- enhancing carbon sequestration and emission reduction in agriculture and forestry through: agro-forestry systems; forest planting and maintenance; climate-friendly management of new and existing forests; establishing or maintaining healthy grassland; and maintaining peatlands;
- ensuring a high potential for adaptation to climate change and diseases and maintaining genetic diversity, especially by supporting local crop varieties and livestock breeds;
- facilitating diversification from the agricultural sector, creating new small enterprises and supporting other forms of job creation in rural areas, particularly through business start-up aid for non-agricultural micro and small enterprises in rural areas and investments in non-agricultural activities in rural areas;
- facilitating the supply and use of renewable sources of energy, and of by-products, wastes, residues and other non-food raw material to promote the bio-economy through: investments in the on-farm production and use of renewable energy; pilot projects for improving by-product use; investments in new forestry technologies for the processing of biomass; and investments in renewable energy infrastructures in rural areas;
- improved soil management through support for practices to prevent soil degradation and depletion of soil carbon stock, such as low tillage, winter green cover, and the establishment of agro-forestry systems and new forests;
- improvement of water and soil quality, and contribute to protecting soil from erosion, compaction, salinisation, landslides, and loss of organic matter;
- increased efficiency in energy use in agriculture and food processing through investments in more energy-efficient buildings and facilities, together with advice on energy-efficiency;
- increasing efficiency in the use of water by agriculture, through investments in more efficient irrigation, advice on water efficiency and preserving the buffer and filter functions of soils;
- reducing nitrous oxide and methane emissions from agriculture through: support for lower use of nitrogen fertilisers; improved livestock management practices (for the treatment of animal wastes); and support for more climate-friendly crop rotation;
- restoring, preserving and enhancing biodiversity, including in Natura 2000 areas and farming systems with a high nature value, and the state of European landscapes, by promoting: environmentally sound farming systems, including organic farming; establishing and/or maintaining wildlife zones in farm and/or forest areas; granting compensation to farmers and/or forest holders for economic disadvantages faced in Natura 2000 areas and designated wildlife corridors; and payments to farmers who undertake to pursue farming in mountain areas and other areas facing significant natural constraints; reward collective action to deliver environmental public goods;
- sustainable water management, including water efficiency (with regard to ecosystems), through the creation of on-farm water storage zones; support for water-efficient cropping patterns; and the establishment and management of forest protection belts against erosion.

**ANNEX 2: EXAMPLES OF OPERATIONS AND COMBINATIONS OF MEASURES THAT COULD BE USED TO DELIVER ENVIRONMENTAL PRIORITIES**

The following examples are **indicative** of the different types of operations, measures and measure combinations that could be used to deliver the priority outcomes set out in this report. These are offered as a **guide only**. The realisation of these and other priority outcomes depends on the development and implementation measures inline with the principles set out in Section 3.

**Table 2: Example of operations and combinations of measures that could be used to deliver environmental priorities**

Priority	Priority outcomes	Type of operation	Measures used	Measure combinations to increase effectiveness	Cross cutting Measures	Other potential priorities
<b>Biodiversity</b>	Favourable conservation status is achieved and maintained for semi-natural habitats and species dependant on (or negatively affected by) agriculture and forestry management.	No application of fertiliser and pesticides on HNV land. Extensive forms of livestock management. Organic production.	Art. 29: agri-environment-climate Art. 30: Organic Art. 35: Forest-environmental and climate services and forest conservation	Art. 32: Payments to areas facing natural or other specific constraints Art. 33: Designation of areas facing natural and other specific constraints Art. 31: Natura 2000 and Water Framework Directive payments Art. 24: Establishment of agro-forestry systems	Art. 15 Knowledge transfer and information actions and Art. 16 Advisory services, farm management and farm relief services. (Raising awareness and improving knowledge and thus, indirectly, the efficiency of operations related to water management, biodiversity protection, climate mitigation and soil protection.) Art. 20: Farm and business development Art. 36: Co-operation; Art 42-45: LEADER; and Art. 61 European Innovation Partnership (Innovative and collaborative operations to address climate mitigation, biodiversity, water and soil priorities)	Water Soil Climate
		Targeted management of habitats and species.	Art. 29: agri-environment-climate Art. 35: Forest-environmental and climate services and forest conservation	Art. 18: Investment in physical assets Art. 32: Payments to areas facing natural or other specific constraints Art. 33: Designation of areas facing natural and other specific constraints		Water Soil Climate
	Biodiversity benefits of existing HNV farming and forestry are maintained, and HNV management reinstated where recently abandoned.	Maintenance of extensive systems or extensification of livestock (eg reduction of stocking density) and grassland management.	Art. 30: Organic Art. 32: Payments to areas facing natural or other specific constraints Art. 33: Designation of areas facing natural and other specific constraints Art. 29: agri-environment-climate	Art. 31: Natura 2000 and Water Framework Directive payments		Water Soil Climate
	Unfarmed features, such as hedges, fallow areas, patches of scrub, trees, ditches and ponds, are managed for benefit of wildlife and to improve connectivity of habitats.	Prepare/ implement management plans for Natura 2000 and HNV areas. Restore/manage/create habitats within and outside Natura 2000 sites. Manage/restore HNV forests. Restoration and maintenance of traditional orchards. Changes in land management (extensive grassland management), conversion of arable land to permanent pasture, afforestation). Establish perennial field boundaries, riparian strips and biobeds.	Art. 31: Natura 2000 and Water framework directive payments Art. 29: agri-environment-climate Art. 21: Basic services and village renewal in rural areas Art. 18(1)(d): Investment in physical assets Art. 35: Forest-environmental and climate services and forest conservation Art. 23: Afforestation and creation of woodland	Art. 32: Payments to areas facing natural or other specific constraints Art. 33: Designation of areas facing natural and other specific constraints Art. 17 Quality schemes for agricultural products and foodstuffs Art. 28: Setting up of producer groups		Water Soil Climate
	Diversity and connectivity of farmland and forest habitats is maintained and improved at a landscape scale. Resilience of farmland and forest ecosystems to climate change is improved.					
<b>Climate mitigation</b>	Carbon sequestration and storage capacity of agricultural and forestland is improved.	Afforestation, establishment of agroforestry systems.	Art. 23: Afforestation and creation of woodland Art. 24: Establishment of agro-forestry systems	Art. 18: Investment in physical assets Art. 26: Investments improving the resilience and environmental value of forest ecosystems	Water Soil Biodiversity	
		Preventative actions against forest fires and climate-related natural disasters.	Art. 25: Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events	Art. 18: Investment in physical assets Art. 35: Forest-environmental and climate services and forest conservation	Water Soil Biodiversity	
		Conversion to more climate resilient forest types.	Art. 26: Investments improving the resilience and environmental value of forest ecosystems			
	Emissions of carbon, nitrous oxide and methane from agricultural and forestry land management are reduced, particularly carbon from previously drained peat soils.	Improve the efficiency of nitrogen fertiliser use (eg reduced use, equipment, precision agriculture, legumes in rotation), improvement of manure storage. Soil management practices (eg tillage methods, catch crops, diversified crop rotations).	Art. 30: Organic Art. 29: agri-environment-climate Art. 35: Forest-environmental and climate services and forest conservation	Art. 17 Quality schemes for agricultural products and foodstuffs Art. 18: Investment in physical assets Art. 26: Investments improving the resilience and environmental value of forest ecosystems Art. 28: Setting up of producer groups	Water Soil Biodiversity	
Efficiency of fuel use in agriculture and forestry is improved and reliance on fossil fuels reduced.	Improvement of energy efficiency (eg use of construction materials which reduce heat loss).	Art. 27: Investments in new forestry technologies and in processing and marketing of forest products Art. 18: Investment in physical assets	Art. 17 Quality schemes for agricultural products and foodstuffs	-		
	Processing of agricultural/forest biomass for renewable energy.	Art. 27: Investments in new forestry technologies and in processing and marketing of forest products Art. 20: Farm and business development	Art. 17 Quality schemes for agricultural products and foodstuffs Art. 28: Setting up of producer groups	-		

Priority	Priority outcomes	Type of operation	Measures used	Measure combinations to increase effectiveness	Cross cutting Measures	Other potential priorities
Soil	Risks of soil erosion by wind and water are reduced.  Organic matter content of mineral soils is improved.	Soil management practices (eg tillage methods, catch crops, diversified crop rotations). Organic production. Conversion of arable land into permanent pasture. Sustainable forest management.	Art. 29: agri-environment-climate Art. 30: Organic Art. 35: Forest-environmental and climate services and forest conservation	Art. 23: Afforestation and creation of woodland Art. 24: Establishment of agro-forestry systems Art. 18: Investment in physical assets	Art. 15 Knowledge transfer and information actions and Art. 16 Advisory services, farm management and farm relief services. (Raising awareness and improving knowledge and thus, indirectly, the efficiency of operations related to water management, biodiversity protection, climate mitigation and soil protection.) Art. 20: Farm and business development Art. 36: Co-operation; Art 42-45: LEADER; and Art. 61 European Innovation Partnership (Innovative and collaborative operations to address climate mitigation, biodiversity, water and soil priorities)	Water Biodiversity Climate
	Wet organic soils are maintained in good hydrological and biological condition.	Grip (ditch) blocking and re-wetting of peat soils. Soil management practices (eg tillage methods, catch crops, diversified crop rotations). Organic production. Conversion of arable land into permanent pasture. Sustainable forest management. Restoration of semi-natural habitats on organic soils.	Art. 29: agri-environment-climate Art. 30: Organic Art. 35: Forest-environmental and climate services and forest conservation Art. 21: Basic services and village renewal in rural areas Art. 25: Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events	Art. 23: Afforestation and creation of woodland Art. 24: Establishment of agro-forestry systems Art. 18: Investment in physical assets Art. 32: Payments to areas facing natural or other specific constraints Art. 33: Designation of areas facing natural and other specific constraints Art. 31: Natura 2000 and Water Framework Directive payments		Water Biodiversity Climate
	Soil functionality and soil capacity to provide ecosystem services are protected from damage by agricultural and forestry operations.	Land use change (eg conversion of arable land to pastures, permanent fallow). Land management change (eg tillage methods, catch crops, diversified crop rotations).	Art. 29: agri-environment-climate Art. 18: Investment in physical assets	Art. 17 Quality schemes for agricultural products and foodstuffs Art. 28: Setting up of producer groups		Water Biodiversity Climate
Water	Water flows on or across agricultural and forestland are managed to reduce environmental risks downstream.	Flood prevention and management measures (eg projects related to coastal and interior flood protection).	Art. 29: agri-environment-climate Art. 35: Forest-environmental and climate services and forest conservation Art. 25: Prevention and restoration of damage to forests from forest fires and natural disasters and catastrophic events	Art. 23: Afforestation and creation of woodland Art. 24: Establishment of agro-forestry systems Art. 26: Investments improving the resilience and environmental value of forest ecosystems Art. 18: Investment in physical assets		Soil Climate
	Diffuse pollution of surface and ground waters by nitrates, phosphates and PPP as a result of agricultural and forest management is reduced.  Efficiency of use of fertilisers and PPP in agricultural and forestry is improved.	Improve the efficiency of nitrogen fertiliser and PPP use (eg reduced use, equipment, precision agriculture, legumes in rotation, biological control), improvement of manure storage, improvement of manure storage.	Art. 30: Organic Art. 29: agri-environment-climate Art. 35: Forest-environmental and climate services and forest conservation Art. 31: Natura 2000 and Water framework directive payments	Art. 17 Quality schemes for agricultural products and foodstuffs Art. 28: Setting up of producer groups		Soil Biodiversity Climate
	Hydrological and ecological conservation and recovery of wetlands, rivers and aquifers through reduced water abstraction, higher efficiency of storage and re-use of water in agriculture.	Water saving technologies (eg efficient irrigation systems). Water storage (including water overflow areas). Water saving production techniques (eg adapted cropping patterns).	Art. 35: Forest-environmental and climate services and forest conservation Art. 18: Investment in physical assets Art. 29: agri-environment-climate	Art. 20: Farm and business development Art. 17 Quality schemes for agricultural products and foodstuffs		Soil Biodiversity Climate
		Wetland restoration and conversion of agricultural land.  Development of semi-natural water bodies. Creation of natural banks and meandering rivers.	Art. 29: agri-environment-climate Art. 21: Basic services and village renewal in rural areas	Art. 18: Investment in physical assets Art. 23: Afforestation and creation of woodland Art. 32: Payments to areas facing natural or other specific constraints Art. 33: Designation of areas facing natural and other specific constraints	Soil Biodiversity Climate	

Based on Annex II of Council Regulation 1698/2005 with article numbers and descriptions adapted for proposed regulation COM(2011)627/3