

Coordination Committee Focus Group Delivery of Environmental Services

Background paper

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1. Purpose of the paper

This paper has been prepared to provide background material to support the work of the Coordination Committee Focus Group that has been established to look at the delivery of environmental services through Rural Development Programmes under the CAP.

The purpose of this Focus Group is to consider how best the delivery of the range of environmental benefits that are supported through the European Agricultural Fund for Rural Development (EAFRD) can be improved and maximised in the future in order to inform the design and implementation of Rural Development Programmes (RDPs) in the next programming period (2014 – 2020). The scope of the group, therefore, covers environmental services provided through agriculture, forestry as well as rural areas more generally.

The paper starts by defining what is meant by the term ‘environmental services’. It then recaps the important role played by rural development policy in meeting the continuing issues facing the environment and the challenges of doing so at the same time as meeting goals of food security and ensuring economic growth and social prosperity in the EU’s rural areas. It concludes by highlighting the opportunities provided by the proposals for rural development policy for the next programming period (2014-2020) to engender the step change needed to deliver against Europe’s demanding targets and objectives concerning the environment.



2. Defining terms - what do we mean by 'environmental services'?

The term 'environmental services' is potentially broad in scope and can be interpreted to cover a wide range of environmental issues. To ensure a common understanding of the focus of the group's work, it is important to be clear about what is meant by the term, particularly within the context of rural development policy.

Indeed, this is particularly important, given that a variety of terms are used, often interchangeably, to refer to the environmental benefits or outcomes that can be incentivised and delivered through the CAP. These include: 'public goods'; 'environmental goods'; 'environmental goods and services'; 'environmental services'; and 'ecosystem services'.

Within the context of rural development policy, the term 'environmental services' is used most commonly as a synonym for 'environmental public goods'. The term public goods is a long established economic concept, which has gained increasing usage over the past few years in relation to the integration of environmental concerns within the CAP. It is an important, as it brings clarity to the articulation of objectives for policy and provides an important function in distinguishing whether or not there might be a case for state intervention in the provision of certain goods and services. While private goods can be secured through the market, this is not the case for public goods for which markets cannot function properly in terms of balancing supply and demand. Although, in some situations a sufficient level of public goods to meet societal demand are delivered alongside economically viable activities, in many cases, given the absence of functioning markets, intervention is needed to secure a desirable level of provision. Where the actions entailed go beyond legislative requirements (and society does not wish to regulate further), economic incentives usually need to be provided principally to encourage land managers to reallocate their factors of production away from the production of marketable commodities towards the provision of public goods (Cooper et al, 2009; ENRD, 2010; Hart et al, 2011a). Specifically, it is these environmental actions that go beyond the mandatory baseline which is captured by the notion of 'environmental services'.



Beyond the policy sphere, the term 'public goods' has not always been understood clearly by stakeholders or by the recipients of support from rural development policy on the ground. Indeed, in many countries the term has not proved easy to translate. The term environmental services would appear to be easier to relate to by non-economists. In addition it has the added benefit of capturing the sense that what is being supported is not just an entity with its own intrinsic value, but comprises a flow of services, providing a function or a benefit to society and human wellbeing more generally, whether that be through the provision of clean water, healthy soils, an attractive landscape etc.

It should be made clear, however, that although there are some overlaps, the use of this term is not synonymous with the concept of 'ecosystem services'. Ecosystem services, by contrast refer to 'the flow of benefits that people obtain from ecosystems (MA, 2005) or phrased differently, 'the contributions that ecosystems make to human well-being, and arise from the interaction of biotic and abiotic processes'. A number of frameworks have been developed for the classification of ecosystem services (MA, 2005; TEEB, 2011; Haines-Young and Potschin, 2010). While they differ in the terms used to describe the different services and the way that these are divided into different categories, what they all have in common is the fact that ecosystem services include both market-based goods and services, such as food, fuel and fibre, as well as non-market goods and services, such as water quality, well-functioning soils, clean air, climate regulation, cultural landscapes etc. Importantly, biodiversity is not considered an ecosystem service as such, rather it is seen as an underlying component, central to the delivery of all ecosystem services.



The environmental services that form the focus of the work are, therefore, those environmental public goods, for which there is a rationale for support through public policy, specifically rural development policy in this case. These are set out in Table 1.

Table 1: Environmental Services within the context of the EAFRD

- Biodiversity – habitats and species
- Landscapes
- Water Quality
- Water Availability
- Soil Functionality
- Air Quality
- Resilience to Flooding
- Resilience to Fire
- Climate regulation – reduced greenhouse gas emissions/ carbon sequestration

3. Importance of delivering environmental services through Rural Development Policy

Significant challenges continue to face all aspects of the environment in relation to rural land use. Considerable efforts have been made to reduce the environmental pressures associated with agriculture and forestry over the past decades, for example through the introduction of legislation, the development of incentive payments, the provision of advice etc. However, although progress has been made in many areas, external pressures have been such that this has been insufficient to reverse the declines in many environmental services. The pressures and threats facing the environment result from two main trends in agricultural land management, notably



increasing specialisation, concentration and intensification of production at one end of the spectrum, and marginalisation and abandonment at the other (EEA, 2005; Stoate et al, 2009; EEA, 2010).

As a result there is still a long way to go to meet European objectives for biodiversity, climate change and water quality, for example and significant problems remain in relation to water scarcity and achieving good soil management (JRC and EEA, 2012; EEA 2010). For example:

- There has been an overall decline in the populations of common farmland birds, albeit at a lower rate in recent years. Between 1990 and 2000, the farmland bird index fell by 1.4 % per year on average. Since then the annual rate of decline has fallen to about 0.7 %¹. There is a suggestion from the combined data that the rate of decline may have decreased in recent years.
- Population declines in rarer threatened farmland species continue unabated and are therefore of particular concern (Birdlife International, 2004).
- Data on grassland butterflies continue to show significant declines (more than 50 per cent since 1990).
- Member State monitoring data on the condition of habitats of Community importance (collected in accordance with requirements under the Habitats Directive) indicate that a particularly low proportion of agricultural habitats have a favourable conservation status (EEA, 2010a) - coastal grazed habitats (eg coastal saltmarshes) and forests (eg wood pasture) have the highest proportion in unfavourable condition, however, over 70 per cent of assessments were also unfavourable for bogs, mires and fens, grasslands and dune habitats, which is of considerable concern, as these are much more widespread habitats (Poláková *et al*, 2012).
- In 2009, IUCN estimated that 27 per cent of mammals, 10 per cent of reptiles and eight per cent of amphibians associated with forest habitats were threatened with extinction in the EU (EEA, 2010a).

¹http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Sustainable_development_-_Natural_resources#Abundance_of_common_birds



- Reporting under the Habitats Directives shows that 52 per cent of forest species and 63 per cent of forest habitats of Community interest have an unfavourable conservation status (EEA, 2010b).
- Atmospheric nitrogen deposition continues to be a significant problem, with over 40 per cent of terrestrial and freshwater ecosystems subject currently to atmospheric nitrogen deposition beyond their critical loads (EEA, 2010c).
- Nitrogen loads for the agricultural sector are also predicted to remain high over the coming years as increases of 4 per cent in nitrogen fertilisers use are predicted for the EU to 2020 (EFMA, 2009). However -according to the source- this masks significant regional differences, with increases mainly projected for the EU-12, with a small decrease estimated for the EU-15.
- The EEA suggest that 'a significant number of water bodies face a high risk of not achieving good ecological status by 2015' (EEA, 2010c), with diffuse and/or point source pollution by nitrogen reported in 124 out of 137 River Basins, phosphorous in 123 cases and pesticides in 95 cases (Dworak *et al*, 2010) - the main sources of nitrogen and phosphates are inorganic fertilisers, organic manures and slurries, livestock feed and silage effluent, and untreated urban waste water.
- The agricultural sector accounts for 24 per cent of total water abstraction within the EU, although in some southern European regions it accounts for up to 80 per cent of water extraction. In the context of climate change the problem of water scarcity is of growing concern, and the number of MS experiencing seasonal or long-term droughts has increased over the years.
- Approximately 57.7 million hectares of agricultural land are at risk of erosion of more than 1 tonnes/ha/yr and 47.2 million hectares are at risk of soil erosion of more than 2 tonnes/ha/yr, with the Mediterranean Member States particularly affected.
- An estimated 45 per cent of European soils have low organic matter content (ie have below 3.4 per cent soil organic matter or 2 per cent soil organic carbon), although this is as much as 75 per cent in southern Member States. Evidence suggests that, without changes to management, soil organic matter is at risk on the majority of arable soils across Europe (Hart *et al*, 2011b).

On a more positive note, the agricultural sector has already achieved a significant decrease in GHG emissions, largely due to decreases in livestock numbers (more than



20 per cent since 1990). Nonetheless it will have an important role to play in achieving further reductions to 2020, particularly through minimising emissions of CO₂ and N₂O from soils, CH₄ emissions from enteric fermentation and rice cultivation; and N₂O and CH₄ emissions from manure management (EEA, 2010).

Without the CAP, and rural development policy, however, the situation is likely to be much worse. The EAFRD provides the largest source of EU funding to encourage land managers to manage the land sustainably and to improve the delivery of environmental services in all Member States.

As a limited and a multifunctional resource, rural land plays an essential role in delivering a whole range of ecosystem services, such as the production of food, fibre and forest products and increasingly energy, as well as the provision of environmental services demanded by society. In many cases it is possible to deliver a combination of these functions together, by the appropriate use of land, although the degree to which this is possible varies depending on a range of factors. These include the productive capacity of the land as well as topographic, climatic and geographic factors.

One of the key challenges for the future, therefore, is how Europe's growing demands for food, fibre, wood products and other products that require land for their production (i.e. bioenergy) can be balanced with the delivery of environmental services so that rural land is managed sustainably in the long term (European Commission, 2011; Foresight, 2011; TEEB, 2011;).

Solutions on the ground will vary in different parts of the EU-27, according to local conditions. In some situations the maintenance of existing farming systems and land management practices will be the key priority, while in others changes in management will be needed, particularly to ensure environmental services can be provided within more intensive farming systems. Increasingly, innovation in production methods and/or management practices will be needed to find ways of increasing food production in the long term, without damaging the environment.

The importance of improving the delivery of environmental services as part of this challenge of moving towards a resource-efficient economy is recognised in the



Europe 2020 Strategy, which sets out a vision of re-orienting Europe's economy towards one based on the principles of smart, sustainable and inclusive growth, stating that the focus on sustainability will 'help the EU to prosper in a low-carbon, resource constrained world while preventing environmental degradation, biodiversity loss and unsustainable use of natural resources' (European Commission, 2010).

The role that the environment can play in delivering the EU2020 strategy is reinforced in one of its associated flagship initiatives, the Roadmap for a Resource Efficient Europe (European Commission, 2011a). The aim of the roadmap is that 'by 2050 the EU's economy has grown in a way that respects resource constraints and planetary boundaries, thus contributing to global economic transformation. Our economy is competitive, inclusive and provides a high standard of living with much lower environmental impacts. All resources are sustainably managed, from raw materials to energy, water, air, land and soil. Climate change milestones have been reached, while biodiversity and the ecosystem services it underpins have been protected, valued and substantially restored'. The challenges of achieving this are significant, and as the roadmap suggests, this 'requires policies that recognise the interdependencies between the economy, wellbeing and natural capital and seeks to remove barriers to improved resource efficiency, whilst providing a fair, flexible, predictable and coherent basis for business to operate' (European Commission, 2011a).

These principles are already included to some degree within the CAP and rural development policy, in particular, with its three core objectives of competitiveness, environment and quality of life in rural areas, although the provision of environmental services as a cross-cutting theme, valued as a means of underpinning economic growth and social wellbeing, is not always sufficiently reflected in some RDPs. This is partly due to the current structure of rural development which is divided into four axes. Measures which have the environment as their primary objective sit within Axis 2. However, in reality there is a range of measures from other Axes that have the potential to deliver environmental benefits, even though this may not be their main objective.

Despite the progress already made to date in stemming the decline in many environmental services, the pressures facing the environment are such that a step change is needed to improve significantly the nature of the environmental outcomes



that are achieved during the forthcoming programming period. Some of the areas that have been highlighted as needing improvement (see, for example, Poláková *et al*, 2012) include:

- the need for environmental management over a much greater area of land than has been the case to date;
- improvements to the design and implementation of rural development measures to ensure that they address concrete priorities and are tailored to local conditions;
- the need for significant investment in advice and support to land managers and other actors in rural areas;
- the use of packages of measures, with the flexibility to use measures in appropriate combinations to deliver environmental services alongside supporting relevant social and economic needs;
- encouragement of the use of novel approaches, such as landscape-scale participation by farmers in agri-environment schemes;
- an upscaling in monitoring and evaluation efforts to demonstrate the outcomes achieved and to facilitate ongoing improvements in scheme design and implementation;
- the need for institutional capacity to be developed, to ensure that sufficient numbers of well-trained staff are involved in RDP development, that they have adequate technical and financial resources to carry out their roles; and
- improvements in communication and consultation, both between government departments and between governments and stakeholders.

A particularly important characteristic of rural development policy that is often highlighted, is the flexibility given to Member States and regions to design multi-annual programmes of measures that respond to the needs and priorities identified nationally, regionally or locally, within an overarching EU framework. This flexibility and targeting, including in agri-environment, should even increase in the future legal framework (see below).

However, rural development policy alone cannot ensure the effective provision of environmental services as part of a longer term trajectory towards the sustainability



of agriculture, forestry and rural economies set within the variety of different economic, social and environmental settings that exist in the EU-27. It needs to work alongside a clear legislative framework, with regulation that is implemented fully and effectively as well as adequately enforced. Within the context of the CAP, and agricultural land management activities under rural development policy, cross-compliance (both the SMRs and standards of Good Agricultural and Environmental Condition) provides an important baseline for environmental management, particularly in relation to soils, water and biodiversity.

4. The role and potential of the 2014-2020 RDPs in delivering environmental services

As mentioned above, future rural development policy will continue to play a critical role in delivering environmental services and helping ensure that rural areas play their role in delivering the EU's environmental objectives and commitments.

The legislative proposals for rural development policy for 2014-2020² are currently under negotiation in the European Council and the European Parliament.

The core objectives for rural development policy are similar to those that exist currently, namely to contribute to:

- The competitiveness of agriculture
- The sustainable management of natural resources and climate action; and
- A balanced territorial development of rural areas.

² COM(2011) 627/3, Proposal for a Regulation of the European Parliament and of the Council on support for rural development by the European Agricultural Fund for Rural Development (EAFRD).



These strategic objectives are reflected in six priorities for action, which are set out as:

1. Fostering knowledge transfer in agriculture, forestry and rural areas;
2. Enhancing the competitiveness of all types of agriculture and enhancing farm viability;
3. Promoting food chain organisation and risk management in agriculture;
4. Restoring, preserving and enhancing ecosystems dependent of agriculture and forestry;
5. Promoting resource efficiency and supporting the shift towards a low-carbon and climate resilient economy in the agriculture, food and forestry sectors; and
6. Promoting social inclusion, poverty reduction and economic development in rural areas.

Although environmental services might be associated most directly with priorities 4 and 5, importantly, ‘caring for the environment’ and ‘contributing to climate change mitigation and adaptation’ are proposed as common goals and cross-cutting themes, which will have to be reflected adequately in the future RDPs through their activities under all priorities.

Many of the areas identified where improvements are needed have been taken into account in the rural development proposal, currently on the table.

One of the most obvious changes is the removal of the current axis structure of the EAFRD and its replacement with six priorities, without any constraints on which measures can be used to deliver each priority. This should help to increase the scope, flexibility and incentive for Member States to address these priorities as creatively as possible and to use packages of measures to deliver the needs identified within their programmes (ENRD, 2011; European Commission, 2011b). Within the individual measures there emerges a greater emphasis on flexibility, cooperation between various actors/beneficiaries, innovation and the need to facilitate action beyond the holding level and promote delivery at a broader landscape scale.

With the environment featuring as a cross cutting theme, this structure could lead to an increase in transparency in the way in which Member States design their RDPs and



propose to use measures to deliver environmental outcomes, as all RDPs will need to set out the environmental objectives and targets that they intend to address and the full range of different measures and actions that they intend to use to deliver these objectives. If the relationship between the action supported by the proposed measure and the environmental outcome is clear, then this should in theory also lead to a better clarity in terms of monitoring and evaluation - as long as indicators can be identified, and that adequate data and expertise is available and accessible to measure progress (Poláková *et al*, 2012).

The CAP proposals as a whole place a reinforced emphasis on advice, with the focus of the Farm Advisory System now expected to go beyond cross-compliance and include environmental issues under rural development policy as part of its minimum scope. The Proposal on rural development includes a possibility to grant support for advisory services to address these issues.

There are also other opportunities for finding new opportunities for the delivery of environmental services through the introduction of a new initiative, the European Innovation Partnership (EIP) for agricultural productivity and sustainability. Amongst other things this aims to 'promote a resource efficient, productive and low emission agricultural sector, working in harmony with the essential natural resources on which farming depends'. It is intended as a policy response to the challenges of increasing food demand, the increasing demands on land for biomass and bioenergy production as well as for nature conservation, pressures on resources and the environment, and the slow-down of growth in Europe's technological development within the agricultural sector. The Commission's Communication on the future EIP was adopted on 29 February 2012³. It highlights that one of its key aims is to integrate sustainability into all components of agricultural production:

- in land management that is both resource-efficient and protects public goods;
- in measures addressing the whole supply chain;
- in actions to improve recycling and the reduction of post-harvest losses; and
- in the development of new products.

³ COM(2012) 79 final. http://ec.europa.eu/agriculture/eip/pdf/com2012-79_en.pdf



'Biodiversity, Ecosystem services, and soil functionality' is mentioned as one of the indicative EIP priorities; innovation that enhances sustainable farm management and forestry practices benefits also eco-system services and soil functionality. Particular emphasis is placed on integrated agro-ecological systems, including the enhancement of soil biodiversity, carbon sequestration, water retention, ecosystem stability and resilience, and pollination functions. Solutions could focus on improved land management (including low tillage and maintenance of green infrastructure), integrated spatial planning and new agro-forestry systems, as well as natural ecosystem conservation methods. Further areas would include optimising the use of genetic resources, low input/organic systems, increasing genetic diversity used in agriculture, and developing bio-remediation for polluted soils, as well as innovative climate change adaptation strategies.

Funding through rural development policy will allow new partnerships to be developed between researchers and practitioners to run innovative projects, with the creation of an EIP network set up to foster cooperation and enhance communication between the scientific community and the farming sector.

The EIP is not about additional funding, adding measures or duplicating efforts. It is about facilitating exchange among innovation actors, sharing good practice, and informing about opportunities, in view of enhancing and improving the effectiveness of innovation-related measures.

A summary of the detailed changes, concerning the measures relevant for supporting provision of environmental services, between the current EAFRD and the legislative proposals currently under negotiation, as set out by the European Commission, are included in Annex 1.

The challenge is now to clarify how these measures can be interpreted and implemented in practice, to ensure that they are used creatively to deliver maximum benefits for the environment and that sufficient environmental safeguards are in place to ensure that negative environmental impacts do not occur in the process of their implementation.



The new structures and the increased flexibility offered to Member States are likely to require new approaches and ways of working, both in terms of developing and implementing RDPs. It will be important to ensure that sufficient guidance and practical assistance is provided to help explain clearly the potential offered by the new rural development regulations and to help build the capacity needed in Member State/regional agriculture and environment departments as well as amongst stakeholders more generally. If increased cooperation and innovation are to be core to future rural development policy and the delivery of environmental services, then increased collaboration and consultation between all interested stakeholders (environmental, farming and rural communities) will also need to be factored in as an essential element to the development of the 2014-2020 RDPs.



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Annex 1:

Changes between the current EAFRD (Council Regulation 1698/2005) and the proposals for the EAFRD for 2014-2020 (COM(2011) 627/3)

Programming period 2007-2013	Proposals for the period 2014-2020
<p data-bbox="102 472 689 622">One environmental priority in the Community Strategic Guidelines: <i>improving the environment and the countryside</i></p> <p data-bbox="102 663 555 696">With three EU-level priority areas:</p> <ul data-bbox="102 730 689 1032" style="list-style-type: none"><li data-bbox="102 730 689 920">(a) biodiversity and the preservation and development of high nature value farming and forestry systems and traditional agricultural landscapes;<li data-bbox="102 943 288 976">(b) water;<li data-bbox="102 999 408 1032">(c) climate change.	<p data-bbox="713 472 1487 584">Two environmental Union priorities for rural development in the draft Council Regulation on the rural development support funded by the EAFRD</p> <ul data-bbox="713 663 1487 1771" style="list-style-type: none"><li data-bbox="713 663 1487 1055">(1) <i>restoring, preserving and enhancing ecosystems dependent on agriculture and forestry, with a focus on the following areas:</i><ul data-bbox="807 797 1487 1055" style="list-style-type: none"><li data-bbox="807 797 1487 943">(1) restoring and preserving biodiversity, including in Natura 2000 areas and high nature value farming, and the state of European landscapes;<li data-bbox="807 965 1310 999">(2) improving water management;<li data-bbox="807 1021 1278 1055">(3) improving soil management.<li data-bbox="713 1077 1487 1771">(2) <i>promoting resource efficiency and supporting the shift towards a low carbon and climate resilient economy in agriculture, food and forestry sectors, with a focus on the following areas:</i><ul data-bbox="807 1245 1487 1771" style="list-style-type: none"><li data-bbox="807 1245 1487 1323">(1) increasing efficiency in water use by agriculture;<li data-bbox="807 1346 1326 1413">(2) increasing efficiency in energy use in agriculture and food processing;<li data-bbox="807 1435 1487 1581">(3) facilitating the supply and use of renewable sources of energy, of by-products, wastes, residues and other non-food raw material for purposes of the bio-economy;<li data-bbox="807 1603 1487 1682">(4) reducing nitrous oxide and methane emissions from agriculture;<li data-bbox="807 1704 1487 1771">(5) fostering carbon sequestration in agriculture and forestry; <p data-bbox="713 1794 1487 2027">The Union's priorities for rural development should be pursued in the framework of sustainable development and the Union's promotion of the aim of protecting and improving the environment as set out in Articles 11 and 19 of the Treaty, taking into account the polluter pays principle.</p>

Programming period 2007-2013	Proposals for the period 2014-2020
<p>A specific environmental Axis "Improving the environment and the countryside" proposing a list of measures:</p> <p>(a) measures targeting the sustainable use of agricultural land through:</p> <ul style="list-style-type: none"> (i) natural handicap payments to farmers in mountain areas; (ii) payments to farmers in areas with handicaps, other than mountain areas; (iii) Natura 2000 payments and payments linked to Directive 2000/60/EC; (iv) agri-environment payments; (v) animal welfare payments; (vi) support for non-productive investments. <p>(b) measures targeting the sustainable use of forestry land through:</p> <ul style="list-style-type: none"> (i) first afforestation of agricultural land; (ii) first establishment of agroforestry systems on agricultural land; (iii) first afforestation of non-agricultural land; (iv) Natura 2000 payments; (v) forest-environment payments; (vi) restoring forestry potential and introducing prevention actions; (vii) support for non-productive investments. <p>Axes 1 and 3 have also some measures with an environmental dimension (e.g.: farm modernisation, rural heritage...).</p>	<p>No more axis but and indicative list of measures with relevance to the environmental priorities:</p> <ul style="list-style-type: none"> (i) investments in forest area development and improvement of the viability of forests; (ii) afforestation and creation of woodland; (iii) establishment of agro-forestry systems; (iv) investments improving the resilience and environmental value of forest ecosystems; (v) agri-environment- climate; (vi) organic farming; (vii) Natura 2000 and Water framework directive payments; (viii) forest-environmental and climate services and forest conservation. <p>It is clear that other RDP measures can also contribute to environmental priorities.</p>