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**Rural development policy and the provision of public goods:
challenges for evaluation**

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Abstract

Environmental "public goods" generated by agricultural land use are discussed in terms of their conceptual underpinnings and how they have been addressed to date in European Union policy for agriculture and rural development. The current debate on CAP reform has intensified the already considerable debate over how these goods should be valued, and how the relevant policy measures should be evaluated. Against this background, a number of methodological and practical issues for evaluation are discussed, including accounting for spatial scale and diversity, the estimation of use and non-use values, governance, potential conflict between "public goods" and their marketisation, and accounting for the marginal effects of rural development policy on environmental assets and their values.

Keywords: public goods, evaluation

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1. INTRODUCTION

There is now widespread recognition of the existence and importance of public goods associated with rural land use at both theoretical level and in policy discourse. In addition to providing food and fibre, primary rural land use is implicated in the co-provision of many other goods and services which create value for society but are not normally fully accounted for in sectoral or national accounts. At the same time, certain types of land use are implicated in certain damaging outcomes, for example in biodiversity and water quality decline, and these too are not normally accounted for in standard economic budgets. These features have been emphasised by the shift towards a consumption orientation in the rural economy (e.g. Slee 2005; Cloke *et al.* 2006) and the influx of incomers seeking rural amenity in various forms, including landscape, wildlife and from residency.

This paper focuses on an examination of environmental public goods generated by agricultural land use and how they have been addressed to date in European farm policy, how they might be provided for by a reformed farm policy and, in particular, how the evaluation challenge in policies for their provision might be addressed with respect to both effectiveness and efficiency as components of rural development policy. The focus in this paper is on the environmental public goods created by farming activity (essentially Axis 2 measures) and their

role in rural development. Using the terminology of the ecosystem services framework, the environmental public goods comprise supporting, regulating and cultural ecosystem services¹.

2. WHEN IS A PUBLIC GOOD A PUBLIC GOOD?

At times, there appears to be a gulf between the loose definition of a public good in lay discourse and the more formal definition in economics. In political debate (e.g. European Commission, 2010)², the term "public benefits" is sometimes used as an apparent synonym, although this may mean simply the value of goods and services available to all members of society. The European Parliament adopted its report (Lyon, 2010) on CAP reform only after amending the definition of "public good" to include "food security and food safety", which some (e.g. IEEP, 2010) regard as "unhelpful". The adjective "public" certainly does (or should) not mean "government-provided", although regulation and/or funding by state authorities is often implied. Again, the extent of the "public" population(s) able to enjoy the good or service is seldom closely defined; this may vary from local residents or a specialist group (e.g. birdwatchers) to the global population as in the case of carbon sequestration. In between, there are "publics" which may be regional but perhaps distant (e.g. in a town receiving water supplies) or national (tax-paying) or EU in extent.

The textbook definition of a public good (Sloman 1994: 417) is of a good (or service) that has the characteristics of non-rivalry and non-excludability in consumption. In contrast, a private good is both excludable and rival in consumption. Non-rivalry and non-excludability make impossible the preservation of property rights (e.g. the enjoyment of the good or service), and hence also the establishment of a market between buyers (consumers, beneficiaries) and sellers (providers). Without such a market and its prices, supply by providers, who cannot extract payment from consumers, is likely to be less than socially optimal given the (unrevealed) demand characteristics of those consumers, who can enjoy the public good without cost, at least to themselves.

A distinction is often made between a pure public good when the above defining characteristics are in no way compromised and quasi-public goods in which some of these characteristics are only partially fulfilled. The classic textbook examples of pure public goods include the services provided by street lighting, a police force or a defence force. In such circumstances, consumption is non-rival, and one person's use does not exclude another. Quasi-public goods and services for which consumption may be limited to certain social groups (e.g. local residents) or where one person's use partly limits that of others (e.g. by congestion) are common with respect to rural land use, as in 'club goods'. In practice, there is a continuum

¹ Because of their cultural character, some measures could be construed as belonging to Axis 3 or 4

² In the cited reference, "Objective 2" of a "future CAP" is proposed as "to guarantee sustainable production practices and secure the enhanced provision of environmental public goods as many of the public benefits generated through agriculture are not remunerated through the normal functioning of markets" [bold in original; underlining added].

of goods from purely public to purely private, and, as one moves from public good to market good, the commercialisation (or marketisation; see below) opportunities increase.

The prevalent public goods in European farming relate to the environment and cultural co-products of farming systems. They include the biodiversity found in agro-ecosystems, including – perhaps especially - that found in the fringe habitats provided by areas of unfarmed land and field boundaries within agricultural holdings, the visual cultural landscape of fields and farm buildings, and the cultural values associated with an identification of farming people with particular places. More contentiously, food security has been considered by some as a public good, not least because food security can so easily act as a screen for protectionist policies.

On the widely held assumption that farmed landscapes and farmland biodiversity are a public good, it seems probable that these are inherently more accessible where there are rights enabling ready access to farmland, especially where use values prevail over non-use values. Consequently, where the road and housing network is dense so that visibility and access are enhanced, or where there are public rights to public outdoor access over land as in Nordic countries and Scotland, the value extracted from the direct use of the public goods provided by land use is likely to be much greater than in countries where land is less accessible and/or there is no such general right of unimpeded public access exists. Whether or not an environmental feature is a public good or a private good is determined at least in part by the disposition of property rights, as well as the inherent features of the good or service under scrutiny.

This issue of property rights takes on even greater significance when dealing with some of the negative externalities arising from farming, such as loss of biodiversity in modern agriculture. If the state has a property right of/over a given level of e.g. biodiversity, a loss of biodiversity would theoretically best be addressed by a financial penalty to farmers causing a loss of that public good of biodiversity. However, establishing a “given level”, and ascribing losses to the actions or inactions of a particular producer, may be difficult. If there is uncertainty about the right, there is no case for a penalty to the farmer for even a loss of biodiversity. Conversely, in response to under-provision of an identified agri-connected public good, there is a *prima facie* strong case for a reward for managing land in ways to provide additional amounts of that good. Such rewards for threshold levels of environmental services fit closely with the GAEC provisions of the single farm payment.

The European Network for Rural Development (2010) identified three types of rural development measures used to encourage the provision of public good associated with RDP measures:

- Area-based payments incentivising land management practices that benefit soils, water quality, habitats and species, carbon management, as well as the maintenance of the landscape – for example the agri-environment, the natural handicap and the Natura 2000 measures;
- Support for capital investments that can be used, for example, to provide assistance with the costs of introducing environmentally sustainable technologies and infrastructure on farms (e.g. the farm modernisation measure), in relation to the agricultural sector more

generally (e.g. the infrastructure development and the adding value to agricultural products measures), as well as to support the creation of new business opportunities, services and other activities in rural areas more generally, such as maintaining and promoting the natural heritage, supporting farm diversification, or tourism activities (e.g. the diversification, basic rural services, conservation and upgrading of rural heritage and investment in tourism measures);

- Investments in advice and training for land managers as well as capacity building for people in rural communities (e.g. advice and training measures as well as the use of the Leader approach to deliver rural development actions).

In the remainder of this paper, we concentrate on the not inconsiderable challenge of addressing how to evaluate the rural development impacts of measures to support the provision of environmental public goods (Bradley *et al*, 2010).

3. HOW EUROPEAN POLICY HAS SUPPORTED AGRICULTURAL PUBLIC GOODS

The original five objectives of the EU Common Agricultural Policy (CAP) may be argued to have included public goods in their mention of “*stabilis[ing] markets*” and the “*availability [= security?] of [food] supplies*”, and even in the implied objective of preserving a significant rural population with its cultural traditions and social support capability (Tracy 1989), as demonstrated more recently in the early years of transition in several Central European countries. However, the policy response to agriculturally induced environmental degradation and support for environmental public goods post-dated the formation of the CAP, and was a response to a Northern European critique of the effects of the CAP on the environment (e.g. Bowers and Cheshire 1983).

A clearer declaration of support for public goods came with Article 130R of the 1986 Single European Act, which specified: “*Environmental protection requirements shall be a component of the Community’s other policies*”, including, of course, the CAP. The Birds, Habitats and Water Framework Directives have required Member States to obey this requirement as regards the protection of listed species, wildlife habitats and water. Further, since the introduction of the first area-specific agri-environmental measures in the late 1980s, European expenditure on this field of activity has been mainstreamed and is a key feature of rural development programmes, necessarily giving Member States a great deal of discretion in how the support is spent. In the 1990s, the MacSharry reforms saw the EU-wide implementation of “*accompanying measures*”, and the Agenda 2000 reforms to the CAP installed Pillar 2 as a component of the CAP budget - equal in nature if not in size to Pillar 1 – in which “*rural development*” policy was seen to include major support for agri-environmental measures carried out by farmers, for the implicit purpose of providing public goods.

The Commission’s November 2010 proposals (COM(2010) 672) for further CAP reform included several references to “*public goods*”, and to “*challenges*” in the form of food security (in terms of capacity, quality and variety), the environment (e.g. soils, water, air, biodiversity) and climate change, and territorial balance. In addition, the CAP should contribute to the EU

2020 strategy of smart (i.e. innovative), sustainable and inclusive "green" growth. To achieve these objectives, the Commission proposes that direct payments be redistributed, redesigned and targeted, with a number of components including (i) a "green" component payable for "simple, generalised non-contractual and annual agri-environmental actions such as permanent pasture, green cover, crop rotation and ecological set-aside, possibly with enhanced GAEC; (ii) additional income support on an area basis for regions "with specific natural constraints", with optional national top-ups on a voluntary basis; this would take the place of the current LFA subsidy scheme; and (iii) a simplified but not watered-down cross-compliance system.

Depending on the balance (which would vary from country to country, and from region to region) of these different components, these proposals represent a significant "greening" of Pillar 1, i.e. a strengthening of its Payment for Environmental Services (PES) character, even if these services need further definition. With the exception of the above "voluntary" components above, the proposals do not mention a change in the funding basis of Pillar 1, so that the PES approach would be confined to these additional components, and to their application, e.g. national definitions of strengthened GAEC and of a new definition of "areas with specific natural constraints". The Commission is also promoting organic farming – which might be considered as providing bundled public goods as well as market-valued ecosystem services – as a feature of this new system (Haniotis, AES Conference, London, 16 December 2010).

The Commission's proposals for the rural development Pillar 2 of the CAP are much less worked out in the November 2010 document than those for Pillar 1. They seem mostly to confirm the current Axis-based structure, though without much mention of the 2008 Health Check "new challenges" of water management and climate change. A "risk management toolkit" for farm income stabilisation is proposed (even though this seems more suited to Pillar 1), and possibly some "redistribution of funds between Member States based on objective criteria". Greater targeting is advocated, though without extra administrative costs.

The GAEC principle is built on the idea that basic level of public good provision (or reduced levels of public bads) should be expected as a precondition of receipt of a single farm payment. Above that threshold level of payment, additional provision of environmental goods and services should be based on compensation for opportunity foregone. Article 39 of Council Regulation (EC) 1698/2005 specifies that: "*Agri-environment payments shall be granted to farmers [and to other land managers where justified] who make on a voluntary basis agri-environmental commitments.*" Such payments may only be made to cover commitments going beyond mandatory requirements, and "*shall cover additional costs and income foregone resulting from the commitment made. Where necessary, they may cover also transaction cost.*" These specifications makes it clear that agri-environmental payments under RDPs are to be calculated on the basis of actual or implied costs incurred by farmers (and not, apparently, by

other land owners and users) rather than on the basis of the social values placed on the ecosystem services provided by the “commitments” made³.

From an economic point of view, the Regulation places Member State governments in the position of a perfectly discriminating monopsonist, i.e. as the single purchaser of the ecosystem services in question, who is able to offer different prices (payments) to different sellers, thus lowering its expenditure, and depriving sellers of “surplus” economic rent. Such an approach relies on accurate information about the relevant costs and revenues (or unpriced values) involved. Such information is hard to obtain and to verify, particularly when it is likely to fluctuate over time, along perhaps with the unit values involved. However, with renewed emphasis on “targeting” within both Pillars, greater attention in evaluation (see below) will have to be paid to how this is done, both in designing targeted schemes, and in implementing them.

4. THE EVALUATION CHALLENGE: METHODOLOGICAL ISSUES

The evaluation of the RDP is now increasingly guided by principles and supporting documentation from the European Commission and associated structures such as the European Evaluation Network for Rural Development⁴. The Common Monitoring and Evaluation Framework (CMEF) (European Commission, 2006) lays down evaluation principles and procedures. With the help of a limited number of common indicators applicable to each programme, the defined evaluation framework should be applied in the course of ongoing, mid-term and ex post evaluations. While the possibility to apply different methodologies for assessing impacts remains, the European Commission and its supporting structures such as the European Evaluation Network for Rural Development have launched a number of activities in order to support programme authorities and evaluators in implementing the ambitious framework. Explanatory notes and guidelines further clarify methodological challenges. A thematic working group has recently explored “Approaches for assessing the impacts of the Rural Development Programmes in the context of multiple intervening factors” and “Capturing impacts of Leader and of measures to improve Quality of Life in rural areas”⁵.

Against this background, two fundamental conceptual issues underpin any evaluation of the impacts of agricultural public goods on rural development. First, given the diversity of agriculture and other rural land uses across rural Europe and the diverse environmental consequences of farming practice - sometimes creating positive externalities and sometimes negative - the level of public good provision will vary greatly from place to place. Second, the value of these public goods will be influenced both by their intrinsic character and by the values

³ There have been recent calls for a modified interpretation of the “income foregone” principle: “the correct “income foregone” for scaling support in the [English] Uplands should be reinterpreted in line with the economic concept of opportunity cost, which is the income from the best alternative. This would generally be an occupation away from upland farming” (CLA, 2010).

⁴ The European Evaluation Network for Rural Development provides support for improving the quality of evaluation of Rural Development Programmes (RDPs) in Member States of the European Union in the period 2007-2013. See <http://enrd.ec.europa.eu/evaluation/>

⁵ See publications on <http://enrd.ec.europa.eu/evaluation/>

given them by those who reside amongst them or visit them. It is therefore probable that land managers in areas with high levels of agricultural public goods are, *ceteris paribus*, beneficiaries of the movement of often affluent people and their spending power from cities into their hinterlands and beyond.

There are a number of dimensions to the evaluation challenge. Accurate estimation of the highly spatially heterogeneous values of environmental public goods is needed. This must include spatially explicit public good valuation, but such efforts must overcome the challenge of estimating substitution effects (essentially cross-elasticities of demand with respect to different environmental public goods – some of which may exhibit trade-offs with each other in supply, e.g. carbon sequestration and biodiversity). Some values, particularly public good values relating to culture, may be especially hard to enumerate. It may also be important to distinguish between the public good values associated with farming and those arising from inherent landscape features such as water or relative relief. The question of how to create 'agglomeration economies' in public good delivery also raises challenges. Finally, the issue of 'secondary marketisation' is explored. These challenges are considered in turn.

4.1. Accurate estimation of use values and non-use values

Over the last 30 years, the ability to estimate non-market values has improved considerably. The methods have been widely reviewed elsewhere (Bateman *et al.* 2002), and there is now considerable confidence that the non-market values of certain specified attributes and sometimes bundles of attributes can be estimated with reasonable accuracy. There are broadly two groups of methods; those based on revealed preferences, amongst which the travel cost method is the most widely used; and the expressed preference approach, using either contingent valuation (CV) or choice experiment (CE) models. The latter group of methods are used where there is a desire to measure both use and non-use elements of value.

Many studies of agri-environmental public goods have been based on applications of such methods but, for a variety of reasons, estimates of values in one place cannot be reliably used to estimate the overall value across a region or country of that particular attribute. The CV approach has now been applied for several decades, but often with unsatisfactory results either for specific sites or for general use. For specific sites (or species, etc.), there are many methodological problems, including biases of various types likely to arise in over-estimation (e.g. González-Sepúlveda and Loomis, 2010). More generally, transferability of values between sites (or species) seems very difficult (EEA, 2010; Oglethorpe *et al.*, 2000).

The estimation of the environmental outcomes of policy measures is problematic. Without core biophysical data economic valuation of public goods cannot be undertaken. FERA (2009) elaborate a framework for collecting environmental outcomes from the 2007-13 RDP in Scotland, but the required budget for delivering the required information is greater than the total allocation for the MTE in Scotland.

4.2. Capacity for spatially explicit measurement of benefits

The capacity for spatially explicit determination of value is constrained both by the complexity and weak separability of the bundle of environmental services provided by farming practice and by the presence of potential substitute environmental public goods. In many situations, so-called 'agricultural' public goods arise from marginal habitats that are not cultivated, including wetlands or areas of woodland that are unconnected to farming practice, but are nonetheless part of the rural landscape. These valued features may be relict elements of earlier land management practices such as hunting copses (small woods to harbour quarry species), shelter belts or moorland.

Further, the presence of agricultural public goods may be less important to residents, recreationists or tourists where there are obvious substitute public goods, such as those delivered by commercial forestry, non-agricultural commons and heathlands, or in coastal areas associated with features such as dunes and estuaries. In practice, the use values derived from agricultural public goods are likely to be much less where there are attractive coastlines or diverse forest areas than where farming is the overwhelmingly dominant land use over large areas of territory.

4.3. Landscape scale needs and effects

Whereas most interventions to support farming-related environmental public goods (or indeed the reduction of public bads) focus on the individual farm holding as the decision making entity, the challenge from an environmental perspective is often to generate landscape-scale effects, when, as de Groot and Hein (2007) note, 'ecological and institutional boundaries seldom coincide.' Species often require habitats greater in size than that found on a single land management unit, and in consequence any strategy for that species needs to take a landscape-scale approach. Gimona (1999) notes 'it is the preservation of ecological integrity, that is of processes on a number of scales, such as nutrient fluxes, ecological succession, exchanges of propagules, and disturbance which permits the existence of these (*ecological*) systems.' Within specific landscapes, particular holdings may have especial value as key linkages in ecological corridors, particularly when more recent land management practices have resulted in habitat fragmentation. The landscape scale approach is even more vital in water quality management, where one landowner can significantly compromise water quality over a large area.

The requirement of public support for the delivery of so-called environmental public goods in farming is premised on the assumption that they are public (in an economic theoretical sense) and that the land manager is unable to extract reward for their provision. However, proxy markets (e.g. for housing) and market opportunities for businesses which are able to exploit recreational demands may challenge this assumption. One may not be able to charge for accessing a landscape but it is possible to charge someone to stay in accommodation with spectacular views over that landscape and rentals and property values reflect this valorisation – or 'secondary marketisation' (Slee and Walker 1992) - of the environment into marketable goods and services. Given the highly spatially variable nature of both population density and in-

migration into rural areas and the influence of environmental public goods on migration patterns, there may be considerable capacity to internalise the externality and create market goods associated with environmental quality (Saika and Beuret 1999).

Where the value of environmental public goods is biased towards non-use values, the process of secondary marketisation cannot occur, unless environmental NGOs (e.g. Conservation Amenity and Recreational Trusts or CARTS; Hodge and Dwyer 1996) enter the market place and offer contracts to land managers or acquire land and manage it for the co-provision of both environmental and provisioning services. Further, there may be considerable scope for the creation of new markets in environmental services both in communally owned and private forests (Merlo 1996; Mantau *et al.* 2001). Indeed, state-financed payment systems for the delivery of apparently public goods and services may stultify non-governmental payment systems. In such instances, the Lisbon Agenda of job creation and entrepreneurial innovation could be being displaced by unnecessary public subsidy.

4.4. Governance and the delivery of environmental public goods

Hodge (1998) argues for the development of new institutional arrangements which articulate public preferences with respect to environmental goods and services and thereby ensure their delivery in the reconstructed market place. He argues that 'there is merit in mechanisms through which the public are given an opportunity to express and reveal their preferences for alternative landscapes.' The abstract merit of such an idea is challenged by the choice of spatial scale of the public(s) to be consulted and by the extent to which their wishes should be allowed to compromise the room for manoeuvre of land managers seeking to maintain profitable rural enterprise. The choice of spatial scale is critical. It seems highly likely that the appropriate scale for engaging the public is the landscape tract in which they live, but such an approach would bump into wider national and international obligations to protect species and habitats in protected landscapes.

As well as governance arrangements contemplating public engagement in establishing societal preferences, a case can also be made for considering appropriate governance arrangements for the delivery of the environmental good or service in question. There is some evidence that farmers prefer farmer-managed projects to top-down projects managed by public sector environmental bodies or environmental NGOs (Cerf *et al.*, 1999; Blackstock *et al.*, 2010). However, it is essential that local governance and the subsidiarity principle do not compromise higher level policy objectives in multi-level (and multi-sectoral) governance regimes.

The RuDI project (www.rudi-europe.net) has also highlighted the importance of governance in the designing and implementing the current set of RDPs. Whether the designers/implementers are centralised or decentralised, and/or sector-specific (usually agricultural) or multi-sectoral, appears to make a difference to how fast RDPs are set up, and how successful they are in meeting their allocation targets (it is too early to assess whether these allocations are appropriate).

4.5. The links between rural development and public goods

There are clearly some highly important links between the provision of public goods and rural development. These connections arise through two processes both of which create an evaluative challenge. First, the choice of measures selected at programme level under the guidelines for the Rural Development Programmes can be explored with respect to their impact on rural development. Second, the impact of environmental quality on rural economic development can be explored, including, by implication, those (marginal) elements of environmental quality contributed by the Programmes. In both cases, evaluation should be guided by the CMEF principles. Here we focus only on those measures connected to what might be termed environmental public goods.

The contribution of RDP environmental public good measures to rural development arise through payments to farmers for the delivery of environmental goods and services. However, given that the general principle of payment for such services is compensation for farming income foregone, the net effect on rural development might be expected to be neutral or at best small. Indeed, such effects may even be negative if the level of agricultural activity is reduced and if there are reduced interactions of farming enterprise and the wider rural economy. If, however, the provider of the environmental service were to be compensated by its public good value, this could materially affect rural development prospects through an injection of additional income into areas where there was a high level of public good provision.

The second way of exploring impacts is to consider the impact of environmental public good values on regional economies by examining the extent to which environmental quality attracts in economic actors as residential households or businesses. Their presence is a consequence of the environmental qualities of the area and the total economic activity arising can be estimated. Slee *et al.* (2004) have attempted this with respect to forestry and suggested that the impact of the apparent public good values of forestry on regional development in an area of intensive farmland is considerably higher than the value of provisioning services derived from forestry. Such work requires considerable expertise in apportioning the impact of environmental public goods on decisions by economic actors.

5. THE EVALUATION CHALLENGE: PRACTICAL ISSUES

The size, shape and scope of EU rural development policy in the next programming period is still highly uncertain, due to (*inter alia*): the size of the overall EU budget; the share of the CAP within the overall EU budget; the relative shares of Pillars 1 and 2 within the CAP budget, and how these are determined for each Member State; the content of Pillar 2, i.e. its "Axes" or equivalents, which may contract (e.g. "losing" Axis 3 to the Regional Fund) or expand (e.g. to include risk management tools); and the relationship of (the current) Axes 1 and 2 to a reformed Pillar 1, i.e. how the "green" and "specific natural constraints" components of direct payments will fit alongside Pillar 2 schemes. RDP measures probably work best where they are closely aligned to other policy measures, such as the Water Framework Directive.

Where this is the case, it is desirable that any indicators used in the CMEF should also be aligned to other desired policy outcomes.

Although estimation of non-market values has improved dramatically, there are major difficulties in specifying unit values for environmental goods and services as these will necessarily be spatially variant, not just because of the geography of demand (proximity to conurbations etc.) but also because the demand for different environmental services may well differ across Europe, and between different stakeholders, e.g. land managers and the general public. They will also be spatially variant because of the availability of alternative environmental services- such as attractive coastlines, inland water features or forests. Although the science of benefit transfer has improved, it seems unlikely in the short term that sufficiently accurate benefit transfer models can be developed.

The level and range of natural and semi-natural environmental public goods associated with agriculture, such as biodiversity and landscape, seem much more restricted in areas of intensive farming, whereas they are higher in the extensive areas of low-intensity farming. On the other hand, the intensive areas are generally located nearer conurbations with their high populations, and thus may carry higher social values per unit (hectare, species, etc.), due to aggregate demand and their relative scarcity. The value of wildlife and landscapes in extensively farmed areas is probably lower per unit, and fewer people have easy use access to them. The balance of aggregate public-good value between these two (admittedly crude) types of farmed area across the EU is thus difficult to estimate, and further so is the relative importance of evaluation to be undertaken. In relation to forestry, similar conclusions may hold; woodlands near areas of high population are relatively scarce but carry high value per hectare in terms of public goods (including public outdoor access, and sometimes local climatic effects), while the (mainly coniferous) forests in remoter areas are likely to have lower values.

Within any particular area, there will be variations in the intensity of farming and in the co-production of environmental services such as landscape and habitat. In general, it will be easier for the less intensive producer to respond positively to measures to support the enhanced provision of environmental goods and services not least because their land management systems are easier to adapt to such demands. However, disinterest in environmental schemes among more intensive farmers may lead to a patchwork response and compromise the development of ecologic corridors.

The delivery of enhancement to rural land based environmental public goods can be undertaken in different ways. Governance structures mediate the acceptability of measures to promote environmental quality (Blackstock *et al.* 2010). The development of new models of governance for the delivery of environmental enhancement may be crucial to their acceptability amongst land managers. Accordingly, governance models need to be evaluated as well as the environmental outcomes.

The estimation of non-market values of policy measures should be based on the increment to value arising from the policy measure, not the total value of a particular environmental feature. Often good baseline data are lacking, and the detailed assessment of

success (e.g. with the expansion of numbers of Biodiversity Action Plan species) creates a very high cost demand for field survey and data which it is almost impossible to fund adequately.

The greatest difficulty with current and future evaluation is perhaps the challenge of measuring secondary marketisation and second and later round effects on rural development in a more widely conceived conception of rural development than the extant EC notion based on the well-being of rural land managers. The transfer of resources into rural areas because of environmental quality is well recognised (Slee and Skerratt, 2010), as is the contribution of rural land use to that overall quality. The influx of new residents and tourists brings benefit not only to farmers but also to hoteliers and other rural service providers. It is necessary to elicit the contribution of current rural land managers to that total environmental quality, alongside the contributions from relative relief, water features, archaeological features etc., and it is possible that in both lay and policy discourse the contribution of current rural land use may often have been exaggerated.

We conclude that the evaluation challenge regarding the contribution of EU support for the provision of environmental public goods from farming is considerable. Notwithstanding the benefits of the CMEF and the more strategic nature of rural development programmes, the accurate elicitation of rural development impacts of these measures to support the provision of environmental public goods is confronted by both theoretical and practical challenges. It seems likely that current evaluation measures underestimate the economy wide effects of rural land-based environmental public goods, but over-estimate the elicited non-market values. We are still some distance from being able to measure regional or sub-regional environmentally adjusted accounts with any accuracy, even if estimation procedures for some forms of non-market goods and services have advanced considerably.

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