CENTRE FOR RURAL ECONOMY
UNIVERSITY OF NEWCASTLE UPON TYNE

# Options for landscape scale collaboration under the UK's Environmental Stewardship Scheme

Franks, J. R.,[1] Emery, S. B.,[1] Whittingham, M. J.[2] and McKenzie, A. J.[2]

April 2011

[1] School of Agriculture, Food and Rural Development.
[2] School of Biology.

## Executive Summary

Current agri-environmental schemes (AES) in the UK address environmental management at the scale of individual farms, rather than encourage the formation of social organisations that structurally reflect the spatial requirements of natural resources. But two options within the UK's Environmental Stewardship Scheme (ESS) do offer incentives for group action: HR8 (Higher Level Stewardship) and UX1 (in the Upland Entry Level Stewardship). These are subject to analysis to learn lessons about landscape scale organisation and management.

A telephone survey of 18 HR8 agreement holders was conducted using an open-structured questionnaire. These options are more likely to be taken up where (i) there is a history of land mangers working together, (ii) when the ESS has replaced a previous AES, (iii) where there are other, farming related benefits of joint action, and (iv) following encouragement from an outside organisation. Agreements can be forged despite difficult and diverse historic claims to land use because the flexibility of the HR8 option allows each group of stakeholder to devise solutions that best suit their circumstances. The UX1 option is compulsory for upland farmers with shared grazing of moorland commons. Its major problem is requiring the register of land use to be updated and where necessary, Local Commons Associations to be re-launched, and these upfront costs are incurred before final UELS agreement is been reach. Its introduction also required reform of some HR8 options.

Because of (i) the success in forming environmental groups around HR8 and UX1 options, (ii) the evidence that the scale of management is likely to deliver more effective AES and (iii) the acceptance by policy makers that this general approach represents a way forward, a proposal is made to introduce a financial incentive for farmers to collaboratively conserve environmental goods. It is proposed to amend Entry Level Stewardship (ELS) by moving some current options into compulsory cross compliance to free-up points (and therefore money) to create Entry Level Stewardship plus (ELSplus) whose aim would be to incentivise farmers to conserve the environment at a landscape scale. Farmers would be allowed to enter ELSplus alone or if members of ELS, they would be required to enter ELSplus if they were accepted into HLS. Such an innovation would make ESS more effective, allow farmers currently outside ES another way into ES, allow ESS to be more climate change focused, and create social structures and organisations that could be used to improve the management of all land-based natural resources.



(Key words: Environmental Stewardship Scheme, Entry Level Scheme, Higher Level Scheme, Entry Level Stewardship plus, landscape scale, collective organisation, common pool resource).

## 1 Introduction

UK agri-environment schemes (AES) began in 1987 when the Environmentally Sensitive Areas (ESAs) programme was launched. A brief history of the evolution of AES to the current Environmental Stewardship Scheme (ESS) is presented in Boatman *et al.* (2008), Whitby (1994), Dobbs and Pretty (2008) and others. Boatman *et al.'s* (2008) review of the effectiveness of AES allowed them to conclude that "overall, there is good evidence that UK agri-environment schemes have delivered significant benefits to biodiversity", and that "agri-environment schemes are likely to function most effectively when seen as part of a package of measures, including regulation and cross-compliance. To achieve maximum impact, they should be used in a targeted manner" (p 7). They concluded that it is the (i) flexibility of (ii) targeted management options which are designed to (iii) deliver solutions to specific issues using (iv) well-researched solutions, in (v) conjunction with the provision of good information and (vi) advice to farmers that are the principal six factors crucial to a successful AES (p 9). They note that "in general, the higher level schemes are likely to deliver significantly more benefit per hectare of land than the entry-level schemes, but the extent of the latter is clearly much more significant at the landscape scale" (p 119). They conclude with a challenge: how can we achieve "the same level of benefits on a broader scale" (p 10), but the question "the desirability of adopting a landscape approach to scheme implementation" is left open as one which "needs to be addressed in the near future" (p 9).

The issue of landscape approaches to environmental stewardship alluded to by Boatman *et al.* would require the introduction of governance arrangements, scheme options and payments that incentivise land managers to coordinate their conservation and protection of wildlife and landscapes activities. This compares with the existing piecemeal, farm-by-farm, arrangements under current and past AES, (with the notable exception of efforts to increase participation rates on common land). Such ideas have been discussed in the academic literature for some time (Franks and Russell 1996; Franks 1997; McFarlane 1998; Falconer 2000; Hodge and McNally 2000; Falconer 2002; Pretty 2003). For example, MacFarlane (1998) suggested that the UK's Environmental Sensitive Areas scheme (ESA) should be extended to include a higher tier designed to encourage collective management, but this change was not made. Until January 2005 the use of collective options in the UK was limited to negotiating joint management agreements with farmers with

livestock grazing rights to the commons (so-called commoners) through their voluntary, local commons associations. But any agreements were usually concluded on "hefted" commons rather than other land. Reluctance to develop landscape scale options may be because of perceived problems relating to establishing successful and reliable governance institutions composed of land managers and to the potential contractual problems which joint agreements may give rise to. These typically include self-selection bias, moral hazard, adverse selection, the hold-up problem and the assurance problem, (see Franks in press for a discussion of contractual issues as potential barriers to collective contracts).

While problems related to collective action are not inconsiderable, and accepting that "no one can possibly know whether a proposed change in rules is among the more optimal rule changes or even whether a rule change will lead to an improvement" (Ostrom 1999: p 479), Dietz *et al.* (2003a) conclude that "systematic multidisciplinary research has, however, shown that a wide diversity of adaptive governance systems have been effective stewards of many resources" (Dietz *et al.* 2003a: p 1910). There are also examples of successful collective management of natural resources in other countries. For instance, the Australian Landcare Programme, encourages improvements to resource management through collective action (Curtis and De Lacy 1998; Wilson 2004), and the German Landschaftspflegeverbände groups (Prager and Vanclay 2010). The Australian Landcare programme recognises that "individuals acting on their own could not solve key issues such as salinity, soil erosion or weeds or animal pests. Membership would help landholders to share problems and ideas, as they would be working together to tackle problems more effectively: learning about land management at the property and catchment levels; accessing financial and technical assistance from government; and having greater opportunities for social interaction", (C.R.E.R. and C.J.C. Consulting 2002: p. 112). Other groups of land mangers who have worked together to deliver environmental benefits at the landscape scale are discussed in Franks and Mc Gloin (2007a), Davis *et al.* (2004) and Ingram *et al.* (2008).

The development of more effective environmental instruments must overcome the mis-match between the ownership and management of land and the spatial characteristics of watersheds, landscapes, valuable habitats and species. By developing scheme options that encourage land managers to work together at the landscape scale, AES can be designed to better capture any available "economies of configuration" (Gottfried *et al.* 1996) by deliberately organising intervention at the

scale of the target species/habitat/landscape which, because of average farm sizes in the UK, typically requires collaboration across farms.

Therefore, concerted and co-ordinated environmental management agreements between and among neighbouring land owners is relatively untried in the UK and presents substantial challenges over and above those involved in securing contracts with individual land managers. However, this paper examines two options within the UK's Environmental Stewardship Scheme (ESS), one in the Higher Level Scheme (HLS), HR8, and one in Upland Entry Level Scheme (UELS), UX1, that do offer financial incentives for land mangers to collaborate in order to discover any lessons that might be useful for widening the collaborative approach to biodiversity protection and conservation to the landscape scale. The following section briefly reviews the evidence for environmental benefits from managing land at a larger scale than the individual farm. Section 3 reviews the uptake of HR8 and UX1 options in HLS and UELS agreements respectively. Section 4 describes the research methodology, and sections 5 and 6 present the findings for lowland and upland case studies respectively. Section 7 considers the key characteristics which underpin the success of these collective agreements. Section 8 considers the wider lessons that can be learnt from the research findings, and section 9 considers the evidence from the case studies to discuss how the potential contractual problems of collective action have been addressed. Section 10 concludes.

## 2 Current UK agri-environment programme

The current UK agri-environmental programme is jointly funded by the EU, through the European Agricultural Fund for Rural Development with match-funding by the UK Government. Compulsory modulation (the deduction at source of a proportion of the Single Payment Scheme (SPS) payment) of 5% in 2005 is to be increased to 10% by 2012; at least 80% of this is returned to National governments to fund the rural develop programme with an element of compulsory match-funding by Government. The UK also levies "voluntary" (national) modulation, which will bring the total modulation in England in 2012 to 19%. The Rural Development Programme for England's (RDPE) budget for 2007-2013 is some £3.9 billion, which is more than double the budget available for the previous programme (which ran from 2000-2006), and some £3.3 billion of this budget is allocated to agri-environment and other land management schemes designed to help farmers manage their land more sustainably and deliver important outcomes on biodiversity, landscape and access, water quality and

climate change (DEFRA 2010b). Table 1 presents information related to the participation in AES as of October 2010 (data from Natural England 2010b).

After 2005 the Environmental Stewardship Scheme (ESS) replaced the Environmental Sensitive Area (ESA) and Countryside Stewardship Scheme (CSS). The ESS has two tiers, the Entry Level Stewardship (ELS) and the Higher Level Stewardship (HLS). To be eligible for HLS a farmer must enrol onto one of three Entry Level Schemes (ELS): ELS, Organic ELS (OELS), or Uplands ELS (UELS) which was launched in February 2010. ELS is designed to be a "broad and shallow" scheme which has been described as representing "a new phase in agri-environmental schemes, making them more readily accessible to all farmers throughout the country" (Hodge and Reader 2010: p 270). Farmers entering any ELS scheme are offered a menu of management options to select from (though some may be compulsory). Each option has points attached to it, and if an average of at least 30 points/ha is selected the applicant will receive a payment of £30/ha providing all the terms and conditions of the ELS are met, as ELS is a "none competitive" scheme.

**Table 1. Latest facts and figures: agri-environment scheme uptake statistics at October 2010.**

| Scheme | Area (ha) | % of UAA | - /+ % in UAA since 1 March 2010 | Number of Agreements | -/+ of Agreements since 1 March 2010 | Annual Value |
|---|---|---|---|---|---|---|
| CSS | 274,654 | 3.0% | **-0.9** | 8,574 | **-2,012** | £58.4 M |
| ESA | 425,333 | 4.6% | **-0.4** | 6,524 | **-562** | £36.1M |
| ELS | 5,293,544 | 57.0% | **+3.4** | 39,634 | **+1,907** | £137.8M |
| OELS | 392,724 | 4.2% | **+0.1** | 2,717 | **+27** | £37.3 M |
| HLS (Combined with ELS/OELS*) | *649,412* | - | - | *5,850* | ***+1,281*** | £111.4 M |
| HLS (Standalone) | 108,017 | 1.2% | **+0.4** | 815 | **+249** | £20.7 M |
| Total HLS | *757,429* | - | - | *6,665* | ***+1,530*** | *£132.1 M* |
| UELS | *325,958* | - | - | *2,793* | *+2,793* | *27.3 M* |
| **Overall Total** | **6,494,272** | **69.9%** | **+2.6** | **58,264** | **-391** | **£401.7 M** |

* Most land in HLS is already accounted for in ELS or OELS / Numbers in italics not included in overall total / UAA is Utilisable Agricultural Area, by which is meant farmland and associated land such as woodland and scrub / Annual Value: for CSS and ESA, the figures relate to the annual value of live agreements in the current agreement year. For ES, the figures relate to the first year value of the agreements (the value may vary in other years).

(Source: Natural England 2010b).

In contrast to ELS, HLS is (i) competitive between applications (so only those agreements that offer significant environmental outcomes are selected)[1] and (ii) complex in its environmental demands: it is a "10-year tailored agreement of high environmental value involving complex and specialized land management" (DEFRA 2010a). The HLS is open to all land owners, but applications in designated Target Areas have a higher likelihood of being accepted (Natural England 2010d).[2] Applicants to the HLS need to discuss their intentions with Natural England Project Officers when considering submitting an application, and then submit a Farm Environmental Plan (FEP) (which is based on the Farm Environmental Record (FER)) which needs to include options which support locally designated environmental targets. Creating the FEP is demanding and expensive, so the ESS has funds available to allow the farmer to buy-in the expertise needed to complete a full submission; the finance available to each farmer is related to the area of land farmed.[3]

Funding for ELS has been unaffected by the UK's 2009-10 spending review and budgetary cuts, and although the budget for the HLS "will grow by 83% by 2013/14 as compared with 2010/11" this is less than had previously been budgeted and expected. Moreover, the high level of new HLS agreements already approved up to October 2010 means that Natural England has temporarily suspended further approvals for 2010/11. Although a considerable amount of the £39 million available for new agreements in 2011/12 has already been allocated, Natural England continues to encourages farmers to apply to the scheme (Natural England 2010e) in 2012, (in 2010/11 approximately £50 million was spent on new HLS agreements).

From time to time the ESS is revised. For example, a major study in 2008 (DEFRA/Natural England 2008) examined eight aspects of scheme effectiveness, design and processes. Among its recommendations was an adjustment in the points awarded for some options, a revision of some option prescriptions and the introduction of new options. It also recommended that "climate change should be an overarching theme of Environmental Stewardship" (DEFRA/Natural England 2008: p 7).

---

[1] Applications go through an assessment process that takes into account how the application meets the environmental priorities identified in the local area.

[2] "HLS continues to be a competitive scheme and each HLS application will be assessed on its merits. Applications that demonstrate good environmental management for target area or theme features [relevant to applications for farmers outside the designated target areas] are the most likely to be successful" (Natural England 2010d).

[3] For a review of progress see DEFRA/Natural England (2008).

In 2010 a more substantial revision was made with the introduction of the Upland Entry Level Scheme (UELS). Previously eligible upland farmers received financial support through the Hill Farm Allowance (HFA) whilst also being eligible to join ELS. UELS was introduced to increase the level of environmental management of land within the upland Severely Disadvantaged Areas (SDA). To pay for this, the HFA has been withdrawn and its budget of some £32 million ring-fenced to pay for the UELS. The HFA payment composed an important revenue stream for many upland farmers (Franks 2009) so its potential loss provides a strong incentive to participate in the UELS. Whilst ELS offers £30/ha, the standard UELS payment is £62/ha but it can increase to £92/ha in certain circumstances. Upland farmers who already had ELS agreements are incentivised to convert them into UELS by the higher payments and because the UELS is tailor made for upland environments, so farmer's compliance costs will, on average, be lower than ELS.

### *2.1 HR8 (HLS) and UX1 (UELS) options*

In January 2005 the Environmental Stewardship Scheme (ESS) offered financial incentives for group applications for a very limited number of Higher Level Stewardship management options. Option HR8 is designed to protect resources that typically cover more than one land manager's domain, for example inter-tidal flood management, wetland management and "landscapes with extensive archaeological or historic features" (DEFRA 2005: p. 108); these payments are designed to "contribute towards the cost of facilitating communal agreements" (DEFRA 2005: p. 108). But as of April 2008 there were only 23 agreements under this option, covering 23,000 or so hectares (Data supplied by Natural England, *pers. Com.*).

This analysis focuses on two options, HR8 in HLS and UX1 in UELS; both options offer payments for collective action. Option HR8 is described as a "Supplement for Group Action" and initially paid £10/ha/yr. Option UX1 is described as "Moorland Commons and Shared Grazing Requirements", and pays £5/ha/yr. Neither has points attached to them.

The HR8 payment, introduced in 2005, is a contribution towards:

> "the costs of facilitating linked agreements, which together manage a target feature. It is particularly targeted at common land and areas of shared grazing that have two or more active graziers. It may also be applied to applications for agreements covering areas under more than one ownership, which are to be managed for resource protection, inter-tidal habitat management and/or wetland management" (Natural England 2010c: p 77).

Unlike HR8, option UX1 is a compulsory requirement of UELS for:

> "all shared grazing above the Moorland Line where there are two or more active graziers".

Option UX1 has no points attached to it, but is a supplementary payment of £5/ha/yr as a contribution towards "the costs of facilitating communal agreements and collaborative management of grazing livestock" (providing all other individual option eligibility requirements are met) (DEFRA 2009: p 112). The payment is linked to three management conditions (DEFRA 2009):

(1) All sheep must comprise hefted self-maintained flocks, except in exceptional circumstances (further details are provided, p. 112).

(2) The establishment and maintenance of a voluntary commoners' association supported by an internal agreement which must indicate the type of stock, system of land and animal management used, and the purpose of the agreement.

(3) The maintenance of an ongoing record of active graziers and the numbers and type of stock for the period of the agreement, and be able to produce these records on inspection or when requested by Natural England.

The regulations state that Natural England do not need to approve the commoners' association agreement, but that it must be made available on demand by RPA or Natural England inspecting officers during the course of the agreement. Some guidance on what should be included in the internal agreement is shown in the Common Land and Shared Grazing – Supplement to the ELS Handbook (Natural England 2010a).

Therefore, both options provide incentives to manage the landscape at a scale larger than the individual farm or the land farmed by individual farmers, though UX1 is not a voluntary but is a compulsory requirement, albeit for a supplementary payment. Both options recognise the need for payments to cover the additional transaction costs involved with collective governance arrangements, and both have the collective environmental management of common land at their heart, though HR8 can be used on any type of land and fields entered into it do not have to be contiguous.[4]

[4] "Agri-environment payments shall be granted to farmers who make on a voluntary basis agri-environmental commitments. Where duly justified to achieve environmental objectives, agri-environment payments may be granted to other land managers", (Article 39, 2) and "The payments shall be granted annually and shall cover additional costs and income foregone resulting from the commitment made. Where necessary, they may cover also transaction cost." (Article 39, 4) (Council of the European Commission 2005).

## 3 Landscape scale intervention for biodiversity and the Lawton Report

### *3.1 Evidence of environmental benefits from landscape scale intervention*

The ministerial forward to Natural England's England Biodiversity Strategy, "Securing Biodiversity: A new framework for delivering priority habitats and species in England" (DEFRA and Natural England 2008) identified a key policy instrument for "halting, and then reversing biodiversity loss" as the need to take "an integrated approach, with a renewed focus on delivery for whole ecosystems, and at a landscape scale" (DEFRA and Natural England 2008: p 1). It recommends the key policy mechanism for halting, and ultimately reversing, biodiversity loss as (i) the development of more "partnerships" and (ii) the creation of Biodiversity Integration Groups (BIGs) to work, in particular, on landscape-scale projects (p 9). This priority reflects the large number of scientific studies that have concluded that species and habitats need to be managed at a landscape scale, or at least at a scale larger than that of individual farms (Concepción *et al.* 2008; Tscharntke *et al.* 2005): for example, "understanding the negative and positive effects of agricultural land use for conservation of biodiversity, and its relation to ecosystem services, needs a landscape perspective" (Tscharntke *et al.* 2005: p 857).

Key criteria for identifying species which rely on landscape-scale mosaics are; species mobility, reproductive power, the narrowness of its feeding niche (which is linked to the size of its home range), and the need for multiple resources over the course of their lifecycle (Gabriel *et al.* 2010; Öckinger *et al.* 2010). In a detailed study Webb *et al.* (2010) identify 40 of the 358 UKBAP species associated with Lowland Farmland which "depend on landscape-scale mosaics of different farmland habitats" (p 14). Of the 98 BAP species associated with uplands, they conclude that (again) 40 "utilise upland habitat mosaics and are associated with a range of habitat types to complete their life cycle" (p. 36). The report also advocated "pondscapes" based on high water quality, shallow and variable depth profiles, and dynamic development, with lost ponds replaced by newly created ones (p 60). With respect to wetland habitats, it concludes that "many of those species not dependent solely on wetlands require large scale mosaics of both priority and non-priority habitats including grazing marsh, wet woodland and open water" (p. 69). Of the 169 species associated with general woodland, about a third are "operating at a **larger-scale or even landscape-scale mosaic** level, requiring a mixture of trees, scrub, and other open habitats. The majority of species in this category are birds and mammals" (p. 108: bold in original text).

In their review of environmental stewardship, DEFRA/Natural England (2008) concluded that ESS "is making good progress and that the combination of a "broad and shallow" Entry Level strand (ELS) open to all, with a more demanding and selective Higher Level strand (HLS), is achieving the scale of coverage and degree of targeting required to deliver across the range of ES [environmental stewardship] objectives, many of which are complementary", (DEFRA/Natural England 2008: p 6). However, one of the study's recommendations was the need "to develop further understanding of landscape scale requirements" (p 84); the work of Webb *et al.* (2010) has begun to address his deficiency.

When in September 2009 the then Secretary of State in the Department for Environment, Food and Rural Affairs (DEFRA) asked Professor John Lawton to review England's wildlife ecological network, his letter of invitation indicated that a landscape focus was required: "With the effects of climate change and other pressures on our land, now is the time to see how we can enhance ecological England further. Linking together areas to make ecological corridors and a connected network have real benefits in allowing nature to thrive" (Lawton 2010 p. ii). The Lawton Report (2010) argues for the need for a step-change in nature conservation in order to create "a more resilient natural environment for the benefit of wildlife and ourselves" (p v). It suggests a strategy based more solidly on (i) protecting wildlife sites and ecological networks, (ii) rebuilding nature and (iii) establishing a coherent and resilient ecological network (p vii and viii), achieved by a combination of government leadership and "effective and positive engagement with landowners and land managers". In particular, success would need to "improve collaboration between local authorities, local communities, statutory agencies, the voluntary and private sectors, farmers, other land-managers and individual citizens" (p v). In a total of 24 recommendations, eight (listed in Table 2) indicate the need to develop collaborative management of the environment by land managers (and others).

Much recent work on landscape connectivity has been influenced by the impacts of climate change on biodiversity, but a review by DEFRA (2008) concluded that there was "limited support for current policy and guidance on improving functional connectivity by developing ecological networks to enhance species movements in response to climate change" (p 7). Eycott *et al.'s* (2008) review of the evidence to support (or not support) the principle that landscape functional connectivity improves species movement (covering 73 studies of UK species) concluded that "given the magnitude of the threat posed by climate change, this review indicates

that measures to enhance functional connectivity should be included in habitat network plans" (Eycott *et al.* 2008: p 52). Given the intention to make climate change an "overarching theme" of ESS, their conclusions provide additional urgency for the study of landscape scale delivery mechanisms.

**Table 2 Key recommendations of the Lawton Report related to collaborative conservation management.**

| |
|---|
| Recommendation 3. Ecological Restoration Zones (ERZ) need to be established that operate over large, discrete areas within which significant enhancement of ecological networks are achieved, by enhancing existing wildlife sites, improving ecological connections and restoring ecological processes. We further recommend:<br>• ERZs should be proposed and implemented by consortia of local authorities, local communities and landowners, the private sector and voluntary conservation organisations, supported by national agencies.<br>• To start and support this process, and recognising current financial constraints, we also recommend resources be provided , which can be accessed through a competition to implement 12 ERZs in the next three years. (p 72).<br>ERZs are environment restoration areas, of large scale, that are used to rebuild nature and enhance ecological networks. |
| Recommendation 6. Government should produce a strategy to ensure that we protect and secure multiple benefits from our carbon-rich soils and peatlands, and maximise their contribution to ecological networks. |
| Recommendation 10. When determining the boundaries of designated sites, responsible authorities should take better account of the need to support underpinning ecological processes and of anticipated environmental change. (p 78). |
| Recommendation 14. In view of the opportunity presented by their existing statutory remits, in National Parks and AONBs:<br>(a) favourable condition of SSSIs should be achieved as quickly as possible;<br>(b) non-SSSI semi-natural habitat should be brought under management equivalent to SSSI standards; and<br>(c) other land should be managed so as to enhance connectivity. (p 80). |
| Recommendation 16. A new type of Environmental Stewardship scheme is needed, particularly to help buffer sites and establish stepping stones and ecological corridors. This should be simple to administer, be available in key areas, and provide support for high cost but relatively simply management measures. (p 82). |
| Recommendation 18. Government needs to establish a consistent, integrated and long-term expectation of land managers to deliver parts of the ecological network. In doing so, consideration should be given to<br>• providing more readily available, high quality advice; and<br>• developing the Defra Whole Farm Approach to provide an opportunity for all aspects of a farm's environmental and productive potential, simplifies regulations, increases transparency and gives long term commitments to both farmer sand the public. (p 84). |
| Recommendation 19. Habitat creation by government and its agencies, grant-giving trusts, businesses and the voluntary sector requires greater focus on the needs of ecological networks, in particular the need to contribute to Ecological Restoration Zones. (p 85). |
| Recommendation 23. The design and delivery of the Entry Level Scheme of Environmental Stewardship needs to be improved, in particular to ensure key options are taken up in appropriate combinations over a sufficient area. Delivering a more effective ecological network may require refinements to the schemes, such as rewarding farmers who act cooperatively. (p 89). |
| (Source, Lawton 2010) |

### *3.2 The governance of landscape scale initiatives*

The Custodian of Change report (Maxwell *et al.* 2002) followed an undertaking given in the comprehensive review of the prospects for farming entitled *A Forward Strategy for Agriculture* (Scottish Executive 2001). It identified three priority environmental areas for Scottish agriculture: diffuse pollution to water; biodiversity and habitat protection; and landscape change.[5] Amongst the 29 recommendations made in the report was a need to identify the potential for the development of cooperative approaches to tackling these challenges, involving farmers and other rural stakeholders. The Scottish Executive's response to *Custodians of Change* (2003) endorsed the need for research indicating how such cooperative approaches could be taken forward. In a survey largely restricted to Scotland, Davies *et al.* (2004: p 29) found "very few examples" of farmer-run or farmer-initiated cooperatives that have environmental outcomes. They explained this by the "lack of incentives to undertake collective environmental activities, given the added management burden which they place on farmers" (p 29). Where cooperation did occur, farmers generally cooperated "either to manage wildlife problems, or to develop a formal structure to attract funding and gain formal recognition as farmer representatives," (p 29). They concluded that additional incentives are needed to "improve collaboration".

Mills *et al.'s* (2006) study primarily focused on Wales. It recommended a top tier scheme for encouraging co-operative action. They envisaged such a top tier scheme operating on contiguous land areas, but acknowledge that the ES aims could be extended to bring small disconnected biodiversity sites into better management.

Evidence drawn from the Rural Economy and Land Use (RELU) programme has provided additional support for these conclusions. An overview of the studies this research program has funded recommends (i) "designing management prescriptions as far as possible to local conditions", (ii) to "target uptake at the most appropriate scale (e.g. 'catchment' for water quality or 'landscape for farmland birds)" (RELU 2010: p 6), (iii) putting more "emphasis on creating habitat networks and restoring biodiversity" (RELU 2010: p 4), and (iv) shifting the scale at "which scheme agreements are planned, negotiated, funded and delivered ... over time, from the individual farm to the local community of farms" (RELU 2010: p 7). The review considers that these options would (i) improve the viability of farms by fairly rewarding

[5] Some respondents in this research identified that 'waste management' and 'access' were two further priorities which they felt needed to be addressed as part of any future strategy.

farmers for the additional costs of collaborative action (p 7) and (ii) help improve the cost-effectiveness of ESS (p 7).

Formal groups, such as "community action groups, trusts and co-operatives" (RELU 2010: p 10) could be based on Land Care Groups in Australia (Wilson 2004), or Environmental Cooperatives in the Netherlands (Franks and Mc Gloin 2007a; Renting and van der Ploeg 2001), using the insights offered in Ingram *et al.* (2008) and Franks (2008).

### *3.3 Target improvement in status of sites of special scientific interest (SSSIs)*

A Public Service Agreement (PSA) established in 2002 agreed a target of 95% of SSSIs should reach "favourable condition", or be under appropriate management and so qualify as "unfavourable recovering", by 2010.[6] UELS is one initiative introduced to help achieve this objective. The importance of uplands in achieving this aim is evident from the fact that 57% of common land is designated as a SSSI (English Nature 2005; Aglionby 2009). Uptake of previous environmental schemes (ESA and CSS) had required the full support of all active grazier commoners which, in places, proved too difficult a requirement, even though, since the Countryside and Rights of Way Act 2000, Natural England had greater powers available to secure appropriate management of SSSIs and Natura 2000[7] sites (Special Areas of Conservation (SAC)

[6] PSAs detail the aims and objectives of UK government departments for a three-year period. Such agreements also describe how targets will be achieved and how performance against these targets will be measured. The agreement may consist of a departmental aim, a set of objectives and targets, and details of who is responsible for delivery. DEFRA had made ten Public Service Agreements part of the 2002 spending review. For example, Target 2: Improve the environment and the sustainable use of natural resources, and target 3 aimed to preserve biological diversity by "bringing into favourable condition" 95% of all SSSIs by 2010. If a SSSI unit is currently assessed as being in "unfavourable no change", "unfavourable declining", "part destroyed" or "destroyed condition", it is classified as being in "adverse condition" and is not meeting the PSA target. If a SSSI unit is currently assessed as being in "favourable" or "unfavourable recovering" condition, it is classified as 'meeting the PSA target' (House of Commons 2010).

[7] Natura 2000 is described as "the centrepiece of EU nature & biodiversity policy" (Commission 2010). It is "an EU wide network of nature protection areas established under the 1992 Habitats Directive. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) which they designate under the 1979 Birds Directive. Natura 2000 is not a system of strict nature reserves where all human activities are excluded. Whereas the network will certainly include nature reserves most of the land is likely to continue to be privately owned and the emphasis will be on ensuring that future management is sustainable, both ecologically and economically" (Commission 2010).

and Special Protection Areas (SPA)).[8] These two designations together comprise 78.6% of the SSSI area designated on land, and receive "the greatest protection with stringent tests to prevent damaging activities and a requirement for compensatory habitat creation to offset any unavoidable damage" (Lawton 2010: p 46)).

By August 2010 some 93% of SSSI land had achieved PSA targets, and Lawton concluded that "significantly, many of the causes of unfavourable condition for the remaining SSSIs are due to 'off-site' factors that are often outside the control of the site owners or managers. Eutrophication is an example" (Lawton 2010: p 47). This provided the authors with evidence to recommend a general need to improve farmer-to-farmer collaboration (see relevant recommendations which are listed in Table 2). Currently ESS has two management options which offer a financial incentive to improve collaboration between farmers. The next section discusses the uptake of these options, HR8 and UX1.

## 4 Details of the HLS and HR8

As of May 2010, some 35,000 farmers had joined an ELS (Natural England 2009). Whilst both ELS and HLS require farmers to select management options from a menu of options and each option has points attached to it, the differences between these levels are more marked. Firstly, HLS offer less choice of options because farmers are required to select the management options best designed to conserve and protect the theme or target conservation species within their HLS region (specified target species and associated management options had been established for each of England's National Character Areas (NCA) (formally termed Joint Character Areas)) - each NCA is identified on the basis of its underlying geomorphology and habitat structures. Secondly, whereas the ELS adopts a farm-by-farm, piecemeal approach to designing appropriate landscapes, option HR8 offers a payment for group action to compensate for the costs of organising and coordinating management action.

It is worth noting at this point that there is no suggestion or indication within the documentation, or any reference in scheme payments, to the possibility that collaborative action is likely to improve the effectiveness of ESS along the lines that

[8] This particular problem has now been addressed to some extent by The Commons Act (2006) (Franks 2010; Rodgers 2010).

Webb *et al.* (2010) suggests (subject of course, to appropriate landscape scale focused management options being available for farmers to select).[9]

Table 3 shows the number of HR8 agreements, the area they cover and their cost for each year from 2006 to 2010 (up to October 2010); Figures 1 and 2 show the uptake over time. So far, HR8 options are included in 123 HLS agreements, covering some 84,000 ha and involving £3.3 million of life-time expenditure (each HLS agreement runs for 10 years). Although this represents a more than doubling since 2009, 123 is only 1.8% of the 6,665 HLS agreements, though the agreements cover 11.1% of the 757,000 ha under HLS agreements. The total cost is less than 3% of the total HLS expenditure (£132 million, all data as of October 2010). This shows that (i) HR8 is not a popular option, (ii) the proportion of land covered (11.1%) is significantly higher than the proportion of HLS including the HR8 option (1.8%) (because the option is more popular in upland commons agreements, which are larger than the average agreement, and (iii) with a total cost of £3.3 m over ten years, the averages annual expenditure is some £330,000, a small fraction of the total annual expenditure of £132 million.

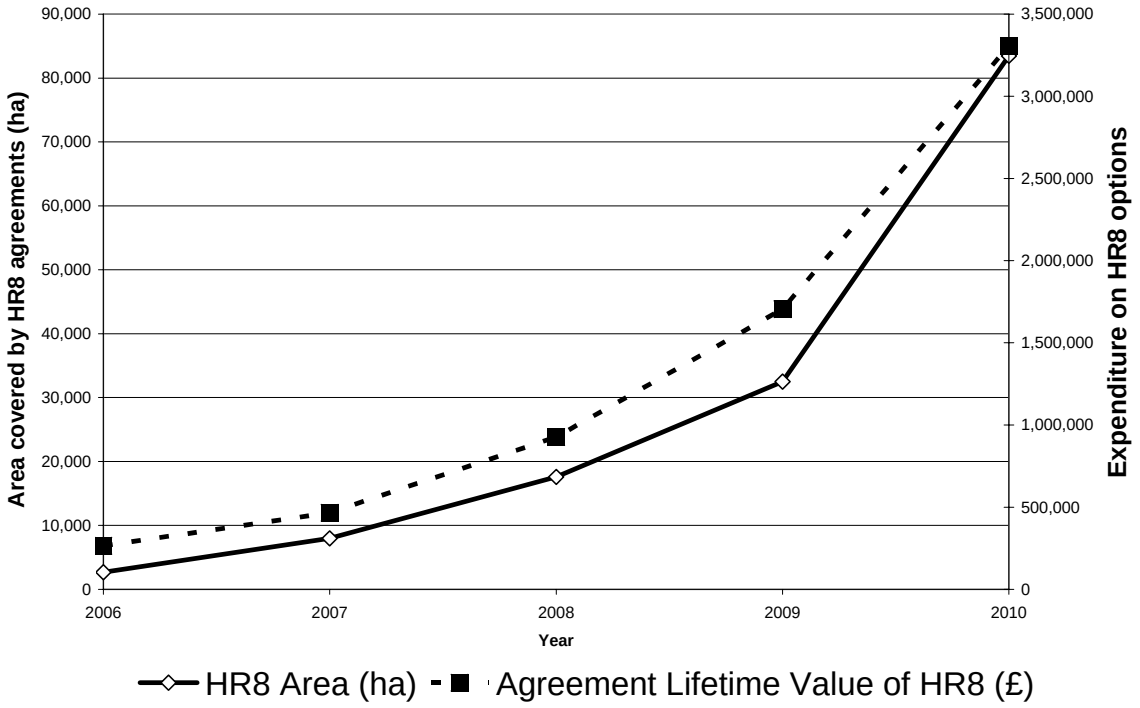
**Table 3 Summary of HR8 option agreements and value**

| Cumulative data | Agreements containing HR8 options | HR8 area | Average area per agreement | Agreement Lifetime Value of HR8 | Average lifetime cost per agreement | Average lifetime cost per ha |
|---|---|---|---|---|---|---|
| (end of year) | (number) | (ha) | (ha) | (£) | (£) | (£) |
| 2006 | 6 | 2,679.69 | 447 | 264,702.11 | 44,117 | 99 |
| 2007 | 13 | 7,984.07 | 614 | 466,273.54 | 35,867 | 58 |
| 2008 | 39 | 17,591.18 | 451 | 926,776.58 | 23,764 | 53 |
| 2009 | 53 | 32,509.26 | 613 | 1,704,675.37 | 32,164 | 52 |
| 2010 | 123 | 83,464.02 | 679 | 3,306,264.53 | 26,880 | 40 |

(Source: Natural England (Genesis Database)) Not all land in a HLS agreement needs to be entered into an HR8 option.

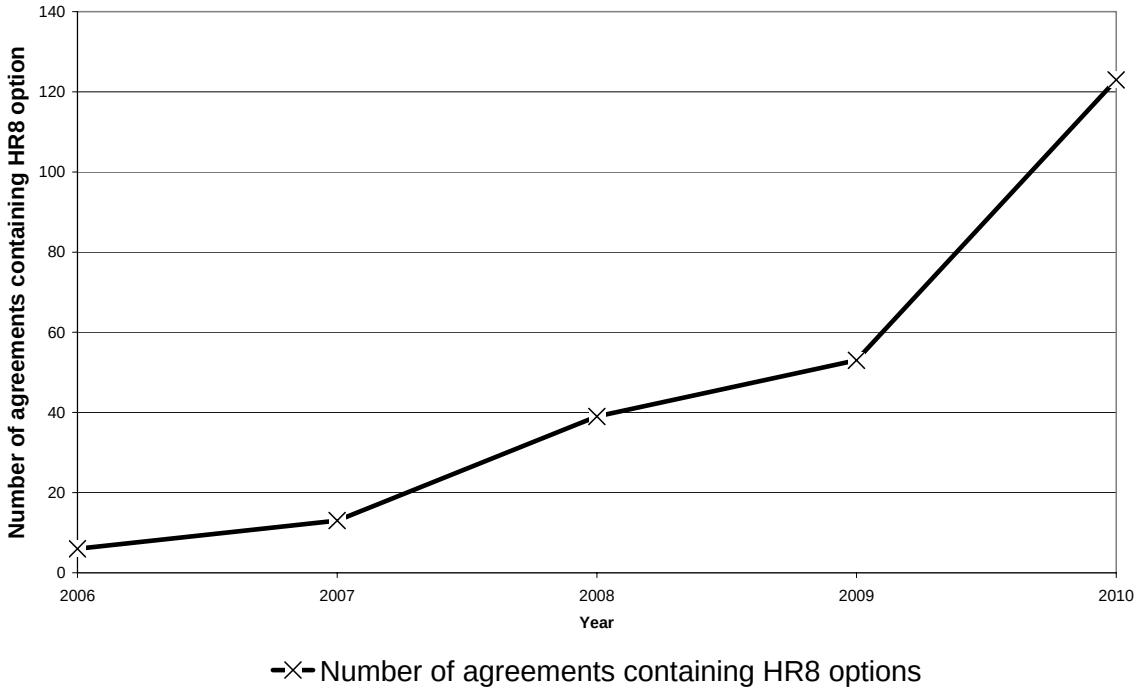
[9] Additional differences include: HLS makes capital grants available, and farmers are expected to ensure that their HLS delivers benefits: "Each option will have a set of management prescriptions that you must follow, but there will be considerable flexibility in the means by which you achieve the agreed outcomes. Environmental Stewardship focuses on achieving outcomes, not just following prescriptions. Adaptive management allows you [the farmer] and Natural England to achieve the aims of the scheme. It will not be sufficient simply to follow the prescriptions. All options therefore have one or more 'indicators of success', which will link management to its intended outcome and will give you [the farmer] and your Natural England adviser a realistic standard of management to aim for." (Natural England 2010c: p 1).

**Figure 1. Trend in area covered by HR8 agreement and expenditure on HR8 options**




(Source: Natural England (Genesis Database))

**Figure 2. Trend in number of HLS agreements containing HR8 options**




(Source: Natural England (Genesis Database))

## 5 Research Methodology

Information relating to HR8 and UELS was gathered from phone interviews of participants of HLS agreements which include the HR8 option. The underlying population of such agreements was provided by Natural England, but valid phone numbers were only available for 43 of the 123 agreements. These were divided into two groups, upland and lowland, using the information provided. Eighteen agreement holders were contacted, 12 upland and 6 lowland. In addition phone interviews were arranged with (i) three land agents, all with extensive experience putting together HLS agreements including HR8 options, and (ii) other individuals - identified during the research – involved in managing HLS agreements which included the HR8 option. The telephone interviews followed a structured questionnaire which identified the date of the agreement, whether it covered upland or lowland farmland, the hectares submitted in the full HLS agreement and the area covered by the HR8 option, the value of the HLS payment and of the annual HR8 options, and how they may have changed, the number and type of stakeholders involved (landlord, active graziers, farmers non-active graziers, non-farmer right holders and other interested parties), the handling of the payment and its division between agreement holders, whether the HLS agreement followed a previous AES, and the characteristics of the land itself.

It soon became clear that each agreement was characterised by individual circumstances, history, size and shape of the land entered, and involved a different combination of stakeholders. This made direct comparison between agreements difficult, and therefore the results are presented case-by-case. Sections 6 and 7 present only eleven of the eighteen case studies which were contacted because this is sufficient to reveal the key similarities and differences between the HR8 options.

## 6 Case Study Analysis: HR8 options in lowland HLS agreements

Four lowland case studies are described in full. The first two provide examples of the innovative use of the HR8 option's linking facility, both involve several small local wildlife sites and SSSIs entered under one agreement, with a single organisation responsible for the management of the fragmented reserves.

*Case Study A: Lowland environmental trust (agreed in 2009)*

To help meet the PSA target for SSSI, a local Natural England officer arranged for six grassland SSSIs in the North of England, each under different ownership, to be managed by a single Conservation Trust in a single HLS agreement which, since the

agreement was made, has used the HR8 option's "link" facility to add additional sites to the original agreement.[10] The sites are all relatively small in area and considered difficult to manage, and most had not been farmed prior to this agreement. The Conservation Trust manages the land using contracted graziers. It receives all the environmental payments and passes a proportion to the land owners as privately agreed: some are happy to forgo payment in exchange for the management of their site, which as SSSIs they are legally obliged to manage in an environmentally sensitive way. Thus far, the environmental quality of the sites is reported to have improved, though it is too early to say definitely and no scientific survey has been conducted. However, a NE spokesperson said they were happy with the progress achieved. This was an unusual case, and the Trust had to be convinced that managing these separate sites would be a viable proposition, and to help this Natural England contributed to a feasibility study using money from its Regional Contingency Fund.

*Case Study B: A partnership of county councils using the HR8 link facility (2008)*

This HR8 agreement involves more than four county councils. It has helped bring 12 nature reserves, covering some 400 ha, under a single management agreement. The sites are all lowland heath land, and most are SSSI - development had left these nature reserves fragmented. The organisers of this HLS pooled the HR8 option payment, together with a grazing management charge (based on the number of days the herd grazes each county council's nature reserves) to employ a "grazing officer" and to establish a native breed cattle herd which grazes most, but not all, the reserves (some continue to be grazed by their existing graziers). Most of these reserves had not previously been subject to grazing management agreements.

The scheme was set up in 2008, and was actively encouraged by Natural England. Cost cutting means the pooling arrangement has recently changed, and now each county council is directly invoiced by the grazing manager for the grazing supplied. This HLS has also used the linking facility of the HR8 option to add additional nature reserves since the agreement was established. So far, no problems between the HLS agreement holding partners have been reported. These nature reserves are all close to urban areas and subject to recreation pressures, for example, one records some 260,000 visits each year, with 600 regular dog walkers. Managing this multipurpose

[10] The Countryside and Rights of Way Act 2000 introduced "new powers for the conservation bodies to make management schemes imposing positive management obligations on landowners as to the management of wildlife sites. Where a management scheme is not being adhered to they can serve a management notice compelling the landowner to take positive steps to manage the site and conserve its special interest" (Rodgers 2009b: p 565).

land use has always been a difficulty with these sites, and it continues to be the most difficult aspect of the agreement so far.

*Case Study C: Lowland Community Land Trust (2010)*

A Community Trust has secured four different HLS agreements each including the HR8 option. All these agreements involve small fields owned by several different land owners. For example, the fourth agreement (secured in 2010) brings together some 140 ha, covering 66 fields and 22 land owners. The land owners have agreed to allow all the HLS payments to be retained by the Community Trust which uses them to fund the grazing management: it has established a native breed herd of 40 Dexter cattle. The owners have the satisfaction of seeing their land managed to a high standard which can also be expected to increases the value of their land.

Natural England are reportedly "delighted" with the arrangements, because (i) it has helped move some of the SSSIs managed in these agreements from "unfavourable" to "favourable" status, (ii) it has only one organisation to deal with, rather than many individual landowners, and (iii) the land entered is in a HLS target areas. This HLS agreement is an example of an organisation acting as a broker and farming contractor in an unconsolidated landscape, and provides a model for managing similar landscapes elsewhere.

*Case Study D: Tenant and landlord HLS agreement (2010)*

This HLS involves an HR8 agreement between a tenant farmer and his landlord. It covers a small area of land with archaeological features. The tenant took the initiative but needed to work hard to persuade his neighbouring farmer (who is also his landlord) to participate in the agreement, principally because the area of land involved is relatively small: the HR8 option payment was worth only £155/year in a total annual environmental payment of £9,254 and the initiating farmer believed this HR8 payment did not cover his arrangement costs. He was also unhappy that he had not known that other neighbouring farmers had entered into HLS, as he would have tried to involve them in extending his HR8 option.

*Summary: key features of lowland case studies*

Although designed with a focus on moorland farmers, these case studies show how HR8 can be used on lowland sites. A wide range of individuals were able to take the initiative to instigate discussions leading towards an HLS agreement including the HR8 option. These case studies alone record a farmer, a Natural England project officer

with the manager of a land trust, and county council employees taking the initiative. Other key lessons from the research include;

- In only one example was the land entered into the HR8 contiguous, in three the HR8 option has been used to compensate for the costs involved in coordinating the agreement and establishing a grazing presence under a single management structure on small, fragmented non-contiguous high value nature areas.
- These agreements involved land areas that individually are too small to be managed economically.
- These agreements allow the owners to discharge their responsibility for managing SSSIs sustainably.
- Gathering these small areas into a single agreement reduces Natural England's administrative costs. A study of agricultural cooperatives in the Netherlands confirms that government transaction costs are lower when dealing with a group of farmers, (and also that the biological efficiency of the scheme in increased (Slangen *et al.* 2008)).
- The HR8 option was considered to be an essential part of the funding needed to off-set the costs of environmental management, namely establishing a grazing herd and coordinating grazing practices.
- The principal driving force behind these agreements is to improve environmental management on a site-by-site basis, and to lower transaction costs (of farmers and Natural England), the motivation was not primarily to enhance biodiversity from a landscape perspective.
- These agreements have so far proved unproblematic.
- Where a small area of land entered into the HR8, the current payment is inadequate to cover all transaction costs.

Case study D is an example of the use of HR8 on contiguous land. A farmer had to work hard to persuade a neighbouring farmer to participate in collaborative conservation, partly because the small scale of the HR8 element meant there was little financial incentive to for an agreement. This example illustrates a key barrier to collaborative action, lack of information; the farmer did not know that other close neighbouring farmers had also submitted HLS applications, had he known their intentions, he would have worked with them to include additional areas of land within his HR8. However, farmers may be reluctant to allow neighbours to know their intention to submit an HLS application because of the competitive nature of HLS agreements. As it is likely that applications which include neighbouring farmers by incorporating the HR8 option would strengthen the submission, some way needs to be found to make farmers aware of their neighbour's submission, without

disadvantaging either applicant. Within the current HLS application procedure, this duty would naturally fall to the Natural England Project Officer, who will know this information and who could informally suggest coordination with neighbours at the preliminary approval stage. This would not, of course, overcome the competitive aspect of HLS vis-à-vis each partner, but should advantage both when their applications are compared to applications without HR8 options.

## 7 Case Study Analysis HR8 and UX1 options in HLS agreements on common land

All the case studies presented in the following section cover land that is designated common land. Nearly all commons are owned by one or more landowner (thought in some cases the landowner is not known), and the use of the commons is governed by rights to graze livestock (typically specified as either sheep or cattle). These grazing rights are recorded in a register, and the commons is managed by a local commons association (LCA). However, despite the updating of the register under the 1965 Commons Registration Act, registers are often out-of-date and therefore incorrect (Rodgers 2010). Though rights differ between commons, in general grazing rights are held by farmers who use them (graziers), farmers who no longer use them, and non-farmers. Moreover, a commons can be composed of a single contiguous block of land, or several smaller, fragmented blocks. These features help differentiate moorland from the lowland examples presented in Section 6, and can make HR8 options complex to negotiate. The common land case studies are presented in two categories, firstly examples of lowland common HLS agreements, and then examples of upland common HLS agreements.

*Case Study E: lowland commons (2009)*

This lowland common of 1000 ha, which borders the sea, is divided into several parts and only 400 ha is entered into the HLS, land which includes a SSSI. Poor grazing quality and access restriction, due to large drainage gutters, mean the land has little agricultural value. Although there is only one active grazier who receives most of the HLS payment, all 12 right-holders are involved in the agreement and all receive a small share of the income, but the landlord (the Crown) has agreed to forego any remuneration: this division follows similar arrangements as under a previous ESA agreement. These arrangements are informal, and reviewed each March at the annual meeting of the Local Commons Association.

*Case Study F: lowland commons (2008)*

This agreement covers some 82ha which includes some SSSI land. It switched from a Wildlife Enhancement Scheme (WES) (which began in 1992) to an HLS with an HR8 option in 2008 following the intervention and encouragement of a Natural England Project Officer.[11] The requirements of the new scheme are described as very similar to the previous WES, but the grazing period has been shortened. There are four commoners in this agreement, two active graziers and two farmer, non-active graziers, but no landlord because this is an example of a commons without an owner. After consideration the Commons Commission assigned a part of the commons (25%) to the Forestry Commission, and the remainder to the "care" of two parish councils. The total HLS payment is some £16,000. About £1,000 is used to pay for fencing, infrastructure maintenance, and insurance. £10,000 is split 60:40 according to the options each grazier selected and their respective share of grazing rights. The remainder, some £5,000 is divided equally between all four rights-holders.

When the WES agreement was made, a solicitor had been used to draw-up an agreement, however, a problem occurred in 2007 when one of the graziers refused to remove his stock after a direct request from Natural England to do so. Following this, the agreement was reviewed to require each grazier to take individual responsibility to comply with environmental directives such as these. The financial contribution of the HLS payment was described as "very important to the farm and to the continuing of grazing of the commons".

*Case Study G: Upland commons (2007)*

The animals that had previously grazed this 84 ha commons had been slaughtered in 2001 due to the foot and mouth outbreak. Little grazing had occurred since then, and bracken had started to take over. Two non-farmers took the initiative and established a Trust with the help of Farming and Wildlife Advisory Group (FWAG) and a grant from the Community Commons Trust. There are 17 commoners recorded on the commons register, three of which are active graziers. The trust uses all the HR8 option payment (£840) to cover secretarial expenses, each grazier receives £300 and each non-grazier £70, though no payments had been made at the time of the interview (November 2010) in order to 'build up a reserve'. There is no recognised landlord for this commons (though ownership has recently been claimed by a local family), and the single largest problem was getting stakeholders to agree, in part because of a dispute with respect to grazing rights which has its origins in the early

[11] The Wildlife Enhancement Scheme (WES) - administered by Natural England - is strategically targeted to specific habitat restoration objectives in SSSIs.

1970 when the commons register was updated - a problem overcome by persistence, discussion and the appeal of common benefit.

*Case study H: Upland commons (2005)*

This HLS agreement covers 3,274 ha and includes SSSI land classified as in "recovering" condition. Again the HLS agreement succeeded an ESA agreement which made it easier to negotiate agreement between the interested parties, with payments pooled and paid to the thirteen active graziers. In this instance, the land lord (the National Trust) receives a small payment for their active woodland management: the non-active graziers receive nothing. Because this agreement involved 13 active graziers it was decided to draw-up a formal agreement (through a local land agent).

The agreement was reached in 2005, and benefited from having the HR8 option payment paid in all ten years of the agreement. However, the conversion of the ELS to the UELS in 2010 meant the HR8 option payments had to be revised because, with the introduction of the UX1 payment, it fell foul of the "double compensation rule". It was agreed that the HR8 payment be reduced from £10/ha to £5/ha for the final 5 years of the HLS agreement, so that together with the £5 from XU1 the agreement holders received £10/ha to meet their organisational costs.

*Case study I: Upland commons: with shooting interests (2007)*

A partnership agreement was written to run in parallel to the HLS when the moor was accepted into the scheme in 2007. It is between the landlord, who has shooting interests over the grouse moor, and two active graziers. The agreement states that all ESS payment be made to the landlord, who retains about 50% of the HR8 option payment to cover their administration costs, and returns the residue to the graziers. In this case the partnership agreement is in effect the commons association, so the positive externalities of this agreement include (i) the reinvigoration of the previously ineffectual management committee and (ii) an updating of the commons register.

*Case Study J: Upland commons: Complex agreement (2009)*

This HLS agreement was arranged between 8 active graziers, 38 non-active graziers, and 5 owners of the 1,600 ha commons. That it followed an ESA helped facilitate the agreement. All HLS payments are put into a single pool and divided between interested parties; 50% to non-graziers, 7% to the moor owners (some £1.64/ha) and 43% to the active graziers. The split between active graziers was by options in as far as this is possible, in recognition that not all farmers had agreed to have the same

management options, and that some options were more expensive to manage than others.

The HR8 payment, some £16,000, is used to pay the secretary, chairman and treasurer of the commons association, as agreed in the formal agreement signed by all interested parties, and to pay for initial set-up costs incurred in the 18 months leading-up to the signing of the agreement. Set-up costs included bringing the commons register up to date and finalising the formal agreement. As the HR8 payment was found to be more than sufficient to meet these costs, it was suggested that Natural England should provide more guidance on how to use these payments and that HR8 payments surplus to the costs of managing the agreement should be 'returned to Natural England'. However, the respondent did not know if the HR8 payment was for every year of the agreement or only for the first or for two years.

*Case Study K: Upland commons: non-shooting moor (2009)*

This HLS agreement covers three moors of 2,000 ha each with some SSSI designated land and each grazed by two farmers. The HR8 option's particular aim was to reintroduce sheep to the largest moor, High Moor (1,365 ha). It took two years of discussions and deliberations, and involved considerable work to bring the commons register up to date, but eventually a business group was established along the lines of a public limited company. This involves the land owner, the active graziers for each moor, and two members of the Court Leet[12]. Board meetings are held every three months, and 18 months into the agreement everything was reported to be running as expected. All the ELS and HLS money is paid into a pool. A share is used to employ two moor rangers, and an education officer. The moor had benefited from moor rangers before the HLS agreement to help fencing and road clearing, and the moor's most difficult issue, managed burning: but it was increasingly difficult to find suitable employees for this role.

Having agreed to stock the High Moor with two hundred sheep, the graziers on that moor received a payment of £25/head from the pool to allow the enterprise to break-even. The remainder of the pool was allocated for capital actions (e.g. fencing) with the residual divided between the landlord and graziers (non-active rights holders received nothing). The HR8 option was worth some £13,600, which the respondent believed would be paid in each of the ten years of the agreement.

[12] This moor is common land and still the legal responsibility of the Court Leet, an ancient manorial court with records dating back to 1560.

*Summary: key features of common land case studies*

Common land has clearly different characteristics to non-commons. They are (i) often characterised by involving a large number of stakeholders, all of whom needs to be consulted, (ii) each stakeholder may have very different status and degrees of involvement, (iii) in general, many have already establish working commons association which provide a platform to build future collaborative agreements, (iv) many have a commons register detailing these involvements, and (iv) there is a need to agree how to compensate non-active graziers. The key research findings of this survey include;

- Updating the commons register was reported to be a most time consuming and therefore expensive exercise, which justifies a HR8 payment in the early, pre-agreement phase of building a collaborative agreement.
- Each agreement found its own way to address the various different interests of its stakeholders (landlord(s), active grazier, farmer non-graziers and non-grazier).
- In doing so, they followed a similar pattern, but there was sufficiently flexibility to satisfactorily address the diverse combination of circumstances.
- The distribution of payments between stakeholders followed a fairly typical pattern: (i) payment for the management costs associated with running the agreement (which generally was a proportion of the HR8 option payment), (ii) make an allocation to the landlord if the landlord asked for such, (iii) as far as possible divide the payments according to the farm-specific options each active grazier had selected (for example, if one farmer had selected the rare breed option, he/she received all of that option specific payment), (iv) make an allocation to the farmer non-graziers/non farmers rights holders, and (v) divide the residue between the active graziers, guided by their agreement holders respective grazing rights.
- Where the HLS agreements succeeded a previous environmental agreement, matters progressed more smoothly. Previous participation (i) had already updated the commons register, (ii) meant the graziers knew one another and their farming systems, (iii) gave confidence that they could work together in collaborative conservation management, (iv) allowed them to build a payment model based on a previously agreed framework, and (v) benefited from an active and effective LCA.
- All upland commons agreements were formal documents created by a solicitor or land agent.
- A formal agreement was needed not only because of the wide range of diverse stakeholder interests but because of the need to address all the different circumstances of the stakeholders and the many and various eventualities that may befall agreement holders. For example, some agreement holders may own the common land they farm, some may be farming on secure Agricultural Business

Tenancies, others on Farm Business Tenancies with less than 10 years remaining, or they may be using grazing or annual licences, and there may be informal occupation of the land.

- Some respondents reported difficulty in finding a suitably qualified solicitor to help create their agreement.
- In some areas, principally those including SSSI designated areas, Natural England Project Officers took the initiative to introduce interested parties to each other. Where the moor was within a National Park, National Park employees were often reported to be involved in initiating and drawing-up the HLS agreement.
- The introduction of the UELS caused some difficulties; (i) some agreement holders reported holding back HLS applications until the UELS was launched, (ii) some existing ELS agreements up-graded to UELS to gain the higher payments and to select different options, but the need to include the UX1 option meant that agreement holders had to revise their HR8 payments so as not to fall foul of the double compensation rule (DEFRA 2009). This generally resulted in reducing the benefit of the HR8 payment to them.
- The change from making HR8 payments in each year of the agreement, to just once or twice during the ten years for agreements covering large areas was not contested – it had clearly been seen as being "over-generous". This, therefore, is an example of good "adaptive governance" - when it was realised the payment was overgenerous it was altered. The ability to act in this way, to quickly address a clear error, needs to become a widespread feature of AES.

## 8 Discussions: lessons from the case studies

This research has shown the wide range of ways in which HR8 options have been incorporated into HLS agreements. The HR8 payment of £10/ha for each of 10 years proved a significant inducement to co-ordinate action, though the subsequent reduction in the number of payments for some types of agreements will clearly lower its incentive value. The HR8 option has allowed land to be coordinated between multiple land managers and across large areas, but it has been used differently on the lowlands compared with the uplands. On the lowlands (i) organisations external to the collaborating farmers helped to create links between farmers where there was none before and (ii) often the cooperating farmers are not neighbours. Characteristics of uplands agreements include, (i) many HLS agreements have evolved from previous AES agreements, (ii) the farmers involved are close neighbours, and (iii) had often coordinated their farm work before through a Management

Committee or directly though a Commons Association - therefore much of the ground work needed to contact and persuade farmers to coordinate their environmental management had already been done.

Whilst lowland farmers needed to be persuaded that their privately owned land would be managed better by the farmers forming a club and contracting out the grazing as a single unit, upland farmers had long ago recognised that common land was better managed by a club of active graziers, which is what LCAs effectively are.

*8.1 Reasons for HR8 agreements to fail*

As with much research of this type, it was not possible to contact groups who had tried but failed to come to a collective agreement. Clearly this may bias the research because of missing information about the barriers faced by groups, and which of them were too difficult to overcome. However, survey participants were asked to report on any examples they may have heard about 'failed' agreements: we were told of one group that had failed to reach agreement because of the landlord's shooting interest, and of another because a small number of farmers flatly refused to participate in any environmental scheme.

*8.2 Division of ES payments among stakeholders*

Very few agreements have reported problems in dividing the ESS payment, despite the need to cater for the wide range of divergent interests (landlord(s), farmer graziers, farming non-graziers, non-farmer non-graziers and conservationists) and activities (e.g. farming, woodland management, shooting, tourism and recreation). In general, the environmental payments were pooled, most or all of the HR8 payment was taken to pay for the work of the organising body and the remainder divided between stakeholders. In some cases landowners received remuneration, but often they did not. Treatment of non-farmer non-graziers (who nevertheless retain grazing rights) varied. In some cases they received a relatively small payment, but in many cases they received nothing.

The link between UELS and HFA caused some complications.[13] HFA created a link between HFA payments and farmer non-active graziers because when the HFA was

[13] HFA was a flat rate payment based on the type of land farmed (moorland and common land, disadvantaged land and severely disadvantaged land). Full payment rates were paid on the first 350 ha, half rates from 350 to 700 ha, and non over 700 ha/holding. A claimant needed to have al least 10 ha of less favoured area land and a stocking density of at lease 0.15 Livestock Units/ha. An additional 10% to 20% was available if certain environmental criteria were satisfied.

introduced, non-active graziers were permitted to "use" their unused stocking rights in their HFA applications: farmers were not asked if they still used their grazing allowance on the moorland, it was assumed they did. So when HFA was replaced by the HLS, these farmers argued that they were entitled to a share of the HLS to "offset" their loss of HFA (because the HFA was ring-fenced to pay for the UELS). In one example (not a case study set out above) this problem was solved using a three tier payment. Tier 1 paid graziers and farmer non-graziers about £2/grazing right. Tier two gave farmer non-graziers a further £5/grazing right. Tier 3 divided the balance between the active graziers, again based on their grazing rights, but adjusted for any individual circumstances, for example, the stocking levels on one part of the moor needed to be reduced so the farmers directly affected received targeted compensation from the pool.

*8.3 HR8 payment: patterns, costs of agreements and start-up costs*

The factors that affect transaction costs incurred establishing HR8 options include,

- the number of interested parties ("stakeholders"),
- the type of interests held by these parties, particularly those related to unexercised rights,
- the involvement or not of the owner of the commons,
- the presence or not of a functioning LCA,
- whether there is a need to persuade all farmers to participate, and
- planning for all the eventualities over the duration of the agreement.

There are many different types of interest and ownership rights related to common land, and this means there is considerable variation between active graziers, and the more diverse these interests the more difficult it will be to form an agreement and the more expensive to draw-up legally binding agreement, leading to higher start-up costs.

Many of the arrangement costs were incurred (i) in the year before the agreement was accepted, as this was when the commons register needed to be updated and the commons association re-established or re-invigorated, and (ii) in the initial year of the agreement, to pay for meetings to discuss and agree the management and division of the environmental payments among stakeholders. A pre-agreement payment appears to be justified and could be based on the number of stakeholders involved in the commons register and the final agreement rather than on the area of land in the final submission.

HR8 and UELS are designed to compensate stakeholders for their transaction costs in reaching collective agreements. They are both aimed primarily on common land because of its high value environmental habitats (e.g. SSSIs) and, as common land, all land managers need to agree to participate in the AES. But the payments do not take into account the additional environmental efficiency achieved from environmental management at the landscape scale. These benefits should be openly acknowledged, and cooperating farmers in some way rewarded to acknowledge their contribution to the improved effectiveness of resource management to achieve targets.

### *8.4 Other ways of creating ecological networks*

There are other approaches to developing a landscape scale policy than offering a direct payment to incentivise land managers to work together. Table 4 shows a continuum from the most passive option, of simply relying on a sufficient concentration of environmental options, to the most active, that of incentivising groups of land mangers to submit landscape scale management plans (based on locally determined guidelines and targets). Current policy relies on a mixture of 1, 2, 3 and 4: each characterised by the degree of activity involved in the action.

**Table 4. Approaches to achieving a landscape scale perspective for agri-environment schemes.**

| **The aim:** Landscape scale approach to land management with collaborative action by land managers. | |
|---|---|
| **Approaches** | **Active (A) or passive (P) (Principle and Agent)*** |
| (1) Rely on the uptake of (density) environmental options | P/P |
| (2) Rely on the uptake of sufficient prescriptions that have a high landscape scale orientation | P/P |
| (3) Expansion of farms so that fewer farmers farm landscape scale areas of land | |
| (4) Allow Natural England Project Officers to guide applications so that natural capital is placed where it can do most benefit at the landscape scale. | P/P |
| (5) Options in ES to formally coordinate the positioning of natural capital (trees, ponds, hedges etc) to develop a landscape mosaic - establishing this as a priority in refereeing ES farm environmental plans. | A/P |
| (6) Options in ES to formally coordinate farmers' farming-related activities. | A/P |
| (7) Farmers, in a bottom-up voluntary initiative, create environmentally oriented farmer led cooperation. | (P)/A |
| (8) Making landscape coordination among land managers a requirement of participation in AES. | A/A |
| (9) Allowing farmer groups to (i) tender for predesigned landscape scale environmental plans or to (ii) submit their own proposals which also conform to local and regional landscape scale objectives. | A/A |
| * Active for Principal (the government) means developing new scheme options for collective action. | |

One barrier to creating these new social structures is the lack of knowledge between neighbouring farmers over who is making HLS applications, so the role of an interested and knowledgeable, but outside agent would be helpful. The most straightforward way of achieving collaborative management would be to use the Natural England project officer's knowledge at the initial application stage. By refusing applications that did not locate specific options in specific places, which the project officer but not the farmer knew would achieve a landscape scale mosaic; this approach could be achieved at almost no extra cost (though the stricter requirements may reduce participation levels). The evidence provided from this survey showed that most of the HR8 agreements were initiated by an outside agency, whether Natural England Project Officer or a National Park officer.

Whilst "passive" approaches appear to be least expensive, the approach selected should depend on (i) the degree to which collaboration in the specific placing of natural capital at the landscape scale is needed and (ii) the types of co-ordinated

management needed to benefit the environment (for example, sequential cutting of hay by neighbouring farmers).[14] However, more active approaches require social structures to form which incorporate adaptive governance of the natural resource. These would need time to build social capital – trust, links, reciprocity, bonds – so that management prescriptions can be altered quickly in line with our evolving knowledge of ecosystem management. Such co-ordinated, rapid, landscape scale, reflective responses increase farmer's compliance costs but also the effectiveness of environmental conservation and protection: two justifications for increasing scheme payments.

Table 4 shows more active ways of initiating landscape scale management based on farmers taking the initiative, forming environmental cooperatives and submitting a collective application which meets pre-agreed targets, into either a competitive tender arrangement or, once their submission was accepted, participating in auction (against other group's submission) to establish the payment they would be willing to accept. It is also possible for ecological networks to be based on land zoning, along the lines used in the Netherlands, where there is also a long-standing practice of purchasing land of high conservation value which is farmed environmentally sensitively. However, this has proved an expensive option.

### *8.6 Lessons for institutional governance*

The two scheme options considered here are only available to farmers in the uplands if they establish a LCA based on an up-to-date commons register. These LCAs form the social structure upon which the agreement is centred. The evidence gathered in this survey illustrates the role and importance of the LCA in the management of these collective options. Table 5 presents the eight general principles identified by Dietz *et al.* (2003a) for robust governance of environmental resources and compares them to the roles discharged by the LCA.

[14] In the Netherlands, where the average size of farm is smaller, collective agreements are more ambitious. To take an example of a collective meadow bird scheme, enrolled farmers must comply with the following terms (Oerlemans 2004): each application must cover a minimum of 100 ha; a minimum of 15 ha must be left undisturbed from 1st of April until the 1st of June; nests must be protected; and long strips of long grass must be left to support young chicks (these can be mown later in the year). Each of these options are assigned a value and the total payment is distributed among the co-operators as they agree between themselves. This is an example of a collective contracts that requires neighbouring farmers to coordinate their farming activities sequentially (Franks and Mc Gloin 2007b).

LCAs fulfil many of the roles established within this governance framework. However, they typically do not contribute to the development of environmental scheme options, to the selection of scheme options on their stakeholder's land or to the monitoring of the environmental outcome of these options; they do not therefore have an active participatory role in the formal development of ES. Their principal benefits are:

- to update commons registers,
- to inform common's stakeholders of the new environmental regulations and opportunities,
- to arrange meeting of stakeholders,
- to develop a formal, legally binding contract,
- to manage the financial flows that are associated with the HLS agreement, and to parcel it out according to the terms of the agreement,
- to use agreed terms and conditions within the agreement to bring pressure to bear on stakeholders who are not complying with the agreement,
- to act as a single point of contact for environmental bodies and government agencies.

LCAs are generally longstanding institutions which have for a long time coordinated the use of common land. This effectively allows a common pool resource to be managed by a club of interested members (the stakeholders). Some have been more effective than others, and the recently introduced Commons Act 2006 is designed to help LCA increase the effectiveness of environmental management. The Act gives LCAs powers to make rules, by majority voting, which are binding on all stakeholders. This has reinvigorated those LCAs which had fallen by the wayside for whatever reason. These legal powers therefore reduce the rights of the landowner and individual tenants, but will enable more LCAs to overcome the objections of a minority of right-holders and allow more land to be submitted to HLS.

**Table 5. General principles for robust governance of environmental resources (Dietz et al. 2003b)**

| General principles for robust governance of environmental resources | Additional comment and note of explanation | Evidence on local commons association's (LCA) structure and managerial role in good governance of collective options on common land |
|---|---|---|
| (i) Devise rules that are congruent with ecological conditions | Good, trustworthy, timely, up to date information about stocks and flows, at the scale of environment events and decisions, is particularly important for decision makers. Information is also needed about "uncertainty and values". | LCA are necessary to fallow HLS agreements on commons land.<br>LCA assist land owners, forestry commission and Natural England (as appropriate) to improve the environmental condition of habitats and SSSIs.<br>However, are not involved in developing management and user rules and have no formal role in monitoring the management of individual scheme options chosen by its stakeholders. |
| (ii) Clearly define the boundaries of resources and user groups | Needs to be clear who is allowed to use the resource, when and how (which also identifies who is not allowed to use the resources). | LCAs update the register of user's interests.<br>LCAs establish the area of the land (commons) that are included in the collective options. |
| (iii) Devise accountability mechanisms for monitors | "Command and control" government back regulations can work if sufficient resources must be available to monitor and enforce rules. However, "when the need is to encourage innovation in behaviours or technologies rather than to require or prohibit familiar ones, command and control approaches are less effective. They are also economically inefficient in many circumstances" (p 1909). | LCAs work with stakeholders to maximise the collective benefit of HLS enrolment.<br>LCAs encourage and support the voluntary participation of all stakeholders.<br>LCAs support the HR8 option as an innovative approach to compensating stakeholders for the costs of working together. |

**Table 5 (*continued*)**

| General principles for robust governance of environmental resources | Additional comment and note of explanation | Evidence on local commons association's (LCA) structure and managerial role in good governance of collective options on common land |
|---|---|---|
| (iv) Apply graduated sanctions for violations | Rule of resource use must be followed "with reasonable standards for tolerating modest violations" (p 1909). Recommending using modest sanction for first violations and increasing penalties for further transgression, but noting that "community-based institutions often use informal strategies of achieving compliance that rely on participants' commitments to rules and subtle social sanctions" (p 1909). | LCAs arrange for agreements to be drafted by solicitors or land mangers into formal agreements.<br>Failure to comply with the terms of the agreement can lead to sanctions as agreed in the formal contract.<br>LCAs often manage the financial flows involved with stewardship payments, and these can be withheld as punishment to agreement holders who do not conform to their individual and collective commitments. |
| (v) Establish/use low-cost mechanisms for conflict resolution | "Sharp differences in power and in values across interested parties make conflict inherent in environmental choices" (p 1909) | LCAs form a single point of contact for Natural England monitors and assessors.<br>LCAs reduce Natural England transaction costs and facilitate environmental benefits on high environmentally valued land. |
| (vi) Involve interested parties in informed discussion of rules (analytic deliberations) | "Well-structured dialogue between stakeholders, informed by analysis of key information about environmental and human-environment systems appears critical" to building trust and social capital which helps to deal with inevitable conflicts (p 1910) | LCA must negotiate with all stakeholders in reaching their formal agreement.<br>LCAs are involved with contacting and explaining the circumstances relating to the environmental management of the commons land.<br>LCAs build trust between stakeholders and over time with other environmental agencies. |

**Table 5 (*continued*)**

| General principles for robust governance of environmental resources | Additional comment and note of explanation | Evidence on local commons association's (LCA) structure and managerial role in good governance of collective options on common land |
|---|---|---|
| (vii) Allocate authority to allow for adaptive governance at multiple levels from local to global (nesting) | "Institutional arrangements must be complex, redundant and nested in many layers". "Catastrophic failures often have resulted when central governments have exerted sole authority over resources" (p 1910). Hierarchical organisations based on committees, sub-committees etc with each organisational component "nested" within another, whilst allowing clear lines of communication and areas of responsibility. "Institutions must be designed to allow for adaptation because some current understanding is likely to be wrong, the required scale of organization can shift, and biophysical and social systems change" (Dietz *et al.* 2003b p: 1909). | LCAs are not directly involved in developing the management options that are available to farmers.<br>There is scope for using LCAs to advice on revisions to Environmental Stewardship and scheme options.<br>LCAs establish clear lines of communication between environment agencies and stakeholders, are able to establish sub-committees where necessary. |
| (viii) Employ mixtures of institutional types (institutional variety) | If governance employs a mixture of institutional types, e.g. hierarchies, markets, and community self-governance, innovative rule evaders can have more trouble than with a single type of rule. | HR8 has reinvigorated some LCAs which had fallen by the wayside.<br>Some LCAs organise management sub-committees.<br>Each agreement holder must comply with statutory management requirements and good agricultural and environmental conditions. Tenants must conform to tenancy agreements. |
| (Source: adapted from Dietz *et al.* 2003b: 1910. Principles vi, vii, and viii are "particularly relevant for problems at larger scale"). | | |

## 9 Discussion: some implications for environmental stewardship scheme

### *9.1 Costs and benefits of a landscape scale approach*

The Policy Commission on the Future of Farming and Food recommended the revision of AES because "the existing [agri environment] schemes ... are not the best vehicle for delivering environmental benefits to a lower level across a wider area." The Commission concluded that to hit the targets required by our EU resource protection and habitat commitments, there was a need for "a new 'broad and shallow' scheme, involving a much larger land area and many more land managers" (Policy Commission on the Future of Farming and Food 2002:p 131). Hodge and Reader (2010:p 270) confirm the success of this objective in noting that ELS has made AES more readily accessible to all farmers throughout the country. However, the broad and shallow and deep and wide concepts which underpin the ESS are not universally supported. For example, Whittingham (2007) argues that "AES are likely to increase biodiversity if a lower number of larger resource patches are provided, in contrast to current practices that promote many small fragmented areas of environmental resource" (Whittingham 2007: p 1), and Hodge and Reader (2010: p270) suggest that it is less clear whether the wider distribution of the available funds might at the same time represent a dilution of the environmental benefits provided. Given the policy intentions related to developing landscape scale approaches, how can connectivity between areas of high biodiversity value be developed without losing the biodiversity gains associated with the ELS? Now that the ESS has been in place for 5 years, it is appropriate to re-examine the shallow and wide and deep and narrow concepts which underpin it from a biodiversity and landscape perspective.

### *9.2 Value for money, ESS reform and legal issues*

The scheduled review of the CAP in 2012/13 motivates a re-examination of the success of ESS from a financial perspective. At the moment the law requires farmers to manage land "according to normative standards of good agricultural practice, and to comply with cross compliance conditions that apply to the type of agricultural land use he has chosen" (Rodgers 2009a) Cross compliance regulations were introduced in the Fischler Reforms of the CAP in 2005. These reforms decoupled the arable area and livestock headage payments from production by converting them into an entitlement to a single direct payment (Single Payment Scheme) subject to farmers agreeing to undertake the normative standards of good agricultural practice referred to by Rogers (2009a) – therefore environmental management standards are now incorporated within property rights by the legal order for the Common Agricultural Policy. In the UK cross compliance combines 19 Statutory Management

Regulations (SMR) and an undertaking to keep farm land in "good agricultural and environmental condition" (GAEC), and can be seen as a set of measures that protects the rural environment as it now exists (Rodgers 2009a).

The agri-environment schemes are "incentive payments for positive management to recreate or improve habitat features on his land" (Rodgers 2009b:p 569). The aim of these payments is to improve or restore habitats and to improve or enhance farmland biodiversity. Article 39, clause 3 of the EU Regulation No.1698/2005 states:

> "Agri-environment payments cover only those commitments going beyond the relevant mandatory standards established pursuant to Articles 4 and 5 of and Annexes III and IV to Regulation (EC) No 1782/2003 as well as minimum requirements for fertiliser and plant protection product use and other relevant mandatory requirements established by national legislation and identified in the programme." (Council of the European Commission 2005: Article 39, clause 3).

The SMR are described as "directives, largely already in force on public and plant health, animal welfare and the environment" (Nix 2011: 143). The cross compliance handbook states "many of the [cross compliance] requirements reinforce existing legal requirements, and for these you are not required to do anything new" (DEFRA 2006: p 7). And "many of the GAEC standards either reflect existing law or represent good farming practice, which you [i.e. the farmer] may already be observing" (DEFRA 2006: p 9). Therefore, that cross compliance fails to go beyond the "relevant mandatory standards", (which they are meant to do) and as a consequence no part of the SPS can be considered an agri-environment payment. Rodgers (2009b:p 567) interprets the cross compliance requirement as meaning that "landowners will ….. be expected to bear environmental compliance costs up to a reference level of good agricultural practice reflected in property rights". But although the SPS are decoupled from production, they are not decoupled from the cross compliance regulations. Penalties, including the loss of a proportion of SPS, can be imposed for failure to comply with these regulations. Therefore, cross compliance does not incorporate the polluter pays principle but allows farmers to meet, in most cases their entire cross compliance costs, from their SPS payment.

However, as Rodgers (2009b) points out, the cross compliance requirements (i) "represent a new category of property-management rule which prosecute a public interest objective – nature conservation – rather than to protect the property owner's rights *per se*" (p 569), and that (ii) these environmental rules "impose positive obligations as an attribute of the exercise of ownership privileges. They do not limit or remove property rights or land use privileges, but impose positive obligations that

condition the manner in which they are exercised" (Rodgers 2009b:p 569). One result of which is that cross compliance environmental regulations constrain land management choices and by adding to their costs diminish net returns, they also limit alternative land use options and thereby reduce the farmer's bargaining power. The SPS is best seen as compensation against the loss of these rights and as a contribution towards off-setting a farmer's cross compliance costs, rather than from the polluter pays perspective.

There is therefore, good reason to increase the contribution cross compliance makes to ES. In fact, some options that were available in ELS have already been withdrawn because they were largely covered by cross compliance, at the behest of the European Court of Auditors who asked that cross compliance and agri-environmental measures to be more distinctly defined (European Court of Auditors 2008). For example, the soil, nutrient, manure and crop protection management plans (which commanded 3, 2, 2, and 2 points respectively and are included in about 11,000 individual management agreements as of 1 September 2007 (Hodge and Reader 2010: their Table 2, p 273)) were withdrawn after January 2007 because of duplication under cross compliance and because they covered what should have been covered under good agricultural practices.[15]

There are other options within ELS which it could be argued address statutory management regulations (SMR) and good agricultural and environmental conditions (GAEC) more than biodiversity and landscape improvement. For example, (i) the six different "buffer strips on cultivated and intensive grassland land" options (in 12,799 agreements), (ii) ditch management (9,505), (iii) management of high erosion risk cultivated land (285), and (iv) the need for in-field buffering of ponds (955). If these options were transferred it would improved the amount of environmental goods delivered by cross compliance, and so help justify the CAP Pillar 1 support payments. It could also be argued that options relating to the specific management of crops[16] be included in SMR/GAEC on the basis that environmental stewardship has already created a new category of property-management rule which control the terms on which access to the resource (land) is permitted (Rodgers 2009a).

---

[15] Agreements made before 1 Jan 2007 are not affected by this change and management plans will continue to attract appropriate payments for the remaining life of agreements.

[16] For example, reduced depth of cultivation on archaeological features (209 agreements as of 1st Sep 2007), over-wintered stubbles (3,874), cereal whole crops silage followed by over-wintered stubbles (174), management of maize crops to reduce soil erosion (367), and management of rush pastures (618).

If these changes were made, cross compliance would take on a greater role for the regulation and management of clean water, air and healthy soils (which is the basis of GAEC), whilst the total points recorded under ELS reduces, but with no loss of environmental benefit delivered. A reduction from 30 to say 22, with a corresponding fall in payments per hectare, would free-up finance which could be used to support additional environmental goods. It is proposed that this free-up money be used to incentivise participation in a new tier in ELS, ELSplus designed to support collective conservation efforts.

*9.3 A proposal for ELSplus*

The primary aim of ELSplus would be to develop connectivity within the landscape to link high value environmental habitats. This could be achieved, for example, by developing corridors, stepping stones, and buffer areas (English Nature undated). This revision to ESS would allow species to move as habitats become unsuitable for them, so helping achieve DEFRA's stated aim of making climate change " an overarching theme of Environmental Stewardship" (DEFRA/Natural England 2008: p 7) because increasing connectivity is seen as an "essential component of adaptation to climate change" (Hopkins 2009:p 202). Improving the linkages between existing high value natural habitats would also reduce the criticism that high value habitats are isolated "within a sea of unsuitable land uses" (Lowe *et al.* 2009: p 33). Specifically, therefore, ELSplus would;

(i) connect areas of high biodiversity value,

(ii) help increase the dispersal and mobility of species across the landscape, and

(iii) generate higher environmental benefits for the same gross environmentally-related expenditure.

It is envisaged that ESSplus would award points for (i) collaborative action by neighbouring or near-neighbour land mangers, (ii) for participating in management options that reduced the intensity of management in specific places located between habitat rich patches, (iii) for active, positive management designed to maintain the desired habitat quality (Hopkins 2009), and (iv) for participation in any options need to off-set any disadvantages from improving the movement of species (for example, predators, pests and diseases) through the landscape.

Considerable work has already been done linking species survivability to landscape features, but it is likely that further research would be needed to develop workable

prescriptions, for example Hopkins (Hopkins 2009:p 203) believes additional consideration would need to be given to supporting the mobility of less mobile species, in areas where favourable habitat is separated by long distances, and in research into the spatial design of types of connectivity (e.g. contiguous corridors or stepping stones) to suite the diverse requirements of the different species living in landscapes. There would also need to be additional research into the transaction costs incurred developing collective organisation and managing group action. [17]

*9.3.1 Further details*

It is proposed to allow two routes into ESSplus. One would allow farmers to select ESSplus without participating in any other tier. The other would be to make it compulsory for farms applying for HLS to participate in ESSplus. Therefore, ELSplus remains voluntary. To acknowledge the key role ESSplus participants play in delivering landscape scale environmental benefits, points for management options under ESS plus would be as generous as regulations and financial resources allow.

It is also proposed that to participate in ELSplus, all farmer member of the same group would need to; (i) have some land within the same NCA (so they are faced with the same set of environmental objectives and similar range of management options), (ii) sign-up to a formal legally-recognised contract, (iii) agree options selected from a menu of landscape-orientated options, (iv) manage the options positively - incorporating the principle of adaptive co-management, and (v) understand that some proportion of natural capital that might need to be created is likely to be location specific – that is, they will have no say in where some activities are located on their farmland.

Whilst the requirement for specific placement of some options would be expected to be a barrier to participation (because they may be required on land with high productive value), members of each group would be given flexibility as to how to distribute the environmental payment between themselves, much as is done with the HR8 payment.

After the collaborative social structure is working it would be possible to allow each group within the same NCA to bid for the ELSplus contract by complying with an outline of conservation aims and means, along the lines produced by Natural

[17] Additional greenhouse gas mitigation options could also be included within ESS, such as payments for the management of carbon sinks associated with land, and for other carbon sequestration activities.

England for their NCA, – instead of offering management agreements of predetermined prices. Or each group could submit their own "landscape scale, conservation scheme" and allow Natural England to place a value on it, which the farmers could then accept or reject. These tender and auction determined-contracts might be better suited to land outside HLS target areas, where the value of connectivity is likely to be high, and where failure to be accepted would not result in disqualification for an HLS option. These changes would (i) impose stronger positive stewardship obligations on land mangers, (ii) require farmers to become more involved in environmental conservation, which is a sign of scheme success (Colman 1994), and (iii) provide opportunities for farmers to pass on information about environmental management to one another, which is one of their preferred way of learning (Defrancesco *et al.* 2008).

## 10 Conclusions

There is now considerable evidence that addressing environmental management at the landscape scale will deliver additional environmental benefits, and make current AES more effective. At present, HR8 and UX1 are the only options available in ESS which incentivise group action. They do so by compensating members for the transaction costs incurred developing groups and group activities. The evidence from this survey finds the groups have no particular trouble in the collective approach that underpins both options. A comment from one interviewee is pertinent here, referring primarily to the confusion that arose when UELS replaced HFA; he said "the key problem with the HR8 agreement was the way in which various policies intersect, not the ways in which the farmers, land agents and other stakeholders interact".

Both options are designed to be used on commons land, and there has been greater uptake of the HR8 option in HLS in upland areas. Land managers in these areas have long coordinated their farming practices, relying on cooperation between graziers, and in doing so farm the commons as a common pool resource. Their LCA is a club, members of which have a common interest - which is expressed through this coordinated management of land and flocks.

Uptake of HR8 in the lowlands has largely been at the encouragement of an outside organisation, and in the main the owners of the land involved were willing to contract-out the management of their fields rather then farm the land individually, or jointly between themselves. Both upland and lowlands stakeholders have

successfully organised and arranged the handling of payments and their distribution between agreed stakeholders in their own ways and to their own satisfaction, overcoming problems as they arise.

The success with which these options have been used encourages further consideration into how collective arrangements could be made more central to ESS, especially as landscape scale design would help in the objective of developing climate change as an over-arching theme of ESS. This study has examined a range of options, from developing the essentially passive approaches currently used, to the more innovative (active) options, in which farmers themselves lead by establishing their own groups and formulating their own proposals for landscape scale options. Although the current financial climate suggests little additional money is available above that already earmarked for agri-environment schemes, the forthcoming reform of the CAP offers opportunities to restructure the CAP payments from pillar 1 to pillar 2. However, there will be resistance to this, so it is suggested that a somewhat similar result could be achieved by greening pillar 1 by moving selected options available under ELS into cross compliance, this would free-up points and money to use to establish an ELSplus option, and make the claim that cross compliance is an environmental payment more defendable.

Additional, landscape scale environmental options will need to be developed together with estimates of the transaction costs of different types of farmer groups. It is suggested that these payment should reflect the number of farmers and their diverse circumstances, rather than the area of land entered, because these are the variables that impose most management time, and hence cost, to developing agreements. Money freed-up by making cross compliance more environmentally demanding would be available to use to compensate farmers for these additional costs.

The evidence from this study suggests establishing groups of farmers is possible and can create robust governance structures, which could potentially help manage other types of natural resources, for example, altering the water table, using land as a flood plain or managing if as a carbon sink. This would further the intentions of converting ESS to be a more effective instrument for combating climate change. The ELSplus landscape option builds on the current system of cross compliance and agri-environmental schemes, and on the evidence related to the effective scale of intervention by AES. As such it represents an evolutionary rather than a radical change. It shows the measures that can be taken to start developing appropriate

forms of social organisation that structurally suit natural resource management. And despite the current financial constraints, it offers a mechanism for improving the environmental cost-effectiveness of current SPS and AES expenditure, with relatively little reform of the existing ESS; it is therefore in accordance with many current policy aims, objectives and intentions.

**Acknowledgements**

We gratefully acknowledge the financial support of Rural Economy and Land Use (RELU) (RES-240-25-0019) which facilitated this study. We further acknowledge the help of Natural England in supplying us with information from their database. We also would like to extend our thanks to the respondents of the survey.

## References

Aglionby, J. C. W. (2009) Commons councils - A new era for the governance of common land? A pilot study from Cumbria, England *ROOTS 2009*. RICS, Clare College, Cambridge, England.

Boatman, N., Ramwell, C., Parry, H., Jones, N., Bishop, J., Gaskell, P., Short, C., Mills, J. and Dwyer, J. (2008) *A review of environmental benefits supplied by agri-environment schemes.* No. FST20/79/041. Land Use Policy Group, London.

C.R.E.R. and C.J.C. Consulting (2002) *Economic evaluation of agri-environment schemes.* Centre for Rural Economics Research, Department of Land Management, University of Cambridge, Cambridge, UK.

Colman, D. (1994) Ethics and externalities: agricultural stewardship and other behaviour. *Journal of Agricultural Economics* **45** (3): p. 299-311.

Commission, E. (2010) *Natura 2000 network. What is Natura 2000 ?* [Online]. Available by http://ec.europa.eu/environment/nature/natura2000/index_en.htm [accessed 7 December 2010].

Concepción, E. D., Díaz, M. and Baquero, R. A. (2008) Effect of landscape complexity on the ecological effectiveness of agri-environment schemes. *Landscape Ecology* **23** (2): 135-148.

Council of the European Commission (2005) Support for rural development by the European Agricultural Fund for Rural Development (EAFRD). Council Regulation (EC) No 1698/2005) 20 September 2005 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32005R1698:en:NOT [accessed 15 Jan 2011].

Curtis, A. and De Lacy, T. (1998) Landcare, stewardship and sustainable agriculture in Australia. *Environmental Values* **7**: p. 59-78.

Davies, B., Blackstock, K., Brown, K. and Shannon, P. (2004) *Challenges in creating local agri-environmental cooperation action amongst farmers and other stakeholders.* The Macaulay Institute, Aberdeen, Scotland.

DEFRA (2005) *Higher Level Stewardship Handbook. Terms and conditions and how to apply.* Rural Development Service (RDS), London, UK.

DEFRA (2006) *Single Payment Scheme. Cross compliance handbook for England. 2006 Edition.* Document No. PB 11305. Department of Environment, Food and Rural Affairs, London, UK.

DEFRA (2008) *Which landscape features affect species movement? A systematic review in the context of climate change.* London, UK.

DEFRA (2009) *Entry Level Stewardship - Third Edition February 2010 Section U Uplands ELS.* London, UK.

DEFRA (2010a) *Environmental Stewardship.* [Online] http://ww2.defra.gov.uk/food-farm/land-manage/stewardship/ [accessed 5th November 2010].

DEFRA (2010b) *What is RDPE.* [Online] London, UK http://www.defra.gov.uk/rural/rdpe/about.htm [accessed 5th November 2010].

DEFRA and Natural England (2008) *Securing biodiversity. A new framework for delivering priority habitats and species in England.* Natural England, Catelogue code NE127, http://naturalengland.etraderstores.com/NaturalEnglandShop/NE127 [accessed 30 November 2010].

DEFRA/Natural England (2008) *Environmental Stewardship review of progress.* [Online]. Available by DEFRA, London http://collections.europarchive.org/tna/20081027092120/http://defra.gov.uk/erdp/schemes/es/es-report.pdf [accessed 23 November 2010].

Defrancesco, E., Gatto, P., Runge, F. and Trestini, S. (2008) Factors Affecting Farmers' Participation in Agri-environmental Measures: A Northern Italian Perspective. *Journal of Agricultural Economics* **59** (1): 114-131.

Dietz, T., Ostrom, E. and Stern, P. (2003a) The struggle to govern the commons. *Science* **302** (1907): 1907-1912.

Dietz, T., Ostrom, E. and Stern, P. C. (2003b) The struggle to govern the commons. *Science* **302** (1907; 12 December): 1907-1912.

Dobbs, T. L. and Pretty, J. (2008) Case study of agri-environmental payments: The United Kingdom. *Ecological Economics* **65** (4): 765-775.

English Nature (2005) *Target 2010 - North West. The Condition of the Region's Sites of Special Scientific Interest in 2005.* English Nature, Peterborough.

English Nature (undated) *The role of corridors, stepping stones and islands for species conservation in a changing climate.*

European Court of Auditors (2008) *Is cross compliance an effective policy?* European Court of Auditors, 12 rue Alcide De Gasperi, 1615 Luxemburg, Luxemburg.

Eycott, A., Watts, K., Brandt, G., Buyung-Ali, L., Bowler, D., Stewart, G. and Pullin, A. (2008) *Which matrix features affect species movement? A systematic review in the context of climate change.* http://www.environmentalevidence.org/Documents/Completed%20Reviews/SR43.p

df, Forest Research Centre and Evidence-Based Conservation, DEFRA Research Contract CR0389

http://www.environmentalevidence.org/Documents/Completed%20Reviews/SR43.pdf [accessed 29th November 2010].

Falconer, K. (2000) Farm-level constraints on agri-environmental scheme participation: a transactional perspective. *Journal of Rural Studies* **16** (3): 379-394.

Falconer, K. (2002) Developing co-operative approaches to agri-environmental policy: a transaction cost perspective on farmers participation in voluntary schemes. *In* Hagedorn, K. (ed). *Environmental co-operation and institutional change: theories and policies for European agriculture*. Edward Elgar, Cheltenham, UK.

Franks, J. R. (1997) The influence of conservation biology on agri-environmental policy. *Farm Management* **9** (10): 495-505.

Franks, J. R. (2008) A blueprint for green co-operatives: organisations for co-ordinating environmental management across farm holdings. *International Journal of Farm Management* **4** (3): 1-24.

Franks, J. R. (2009) Size and non-size effects on the profitability of farms in English Less Favoured Areas. *Journal of Farm Management* **13** (7): 485-508.

Franks, J. R. (2010) The club provision of public goods: the example of upland commons councils. *Journal of Environmental Policy and Planning* **12** (3): 277-292.

Franks, J. R. (in press) The collective provision of environmental goods: a discussion of contractual issues. *Journal of Environmental Planning and Management* **in press (expected June 2011)**.

Franks, J. R. and Mc Gloin, A. (2007a) Environmental co-operatives as instruments for delivering across-farm environmental and rural policy objectives: Lessons for the UK. *Journal of Rural Studies* **23** (4): 472-489.

Franks, J. R. and Mc Gloin, A. (2007b) Joint submissions, Output Related Payments and Environmental Co-operatives: Can the Dutch Experience Innovate UK Agri-Environment Policy. *Journal of Environmental Planning and Management* **50** (2): 233-256.

Franks, J. R. and Russell, N. (1996) *The implications of the Rio De Janeiro Convention on Biodiversity for agricultural environmental policy and agricultural land use in the UK*. Proceedings of the workshop on Landscape and Nature Conservation, Stuutgart-Hohenheim, Germany, September 26th-29th.

Gabriel, D., Sait, S. M., Schmutx, U., Kunin, W. E. and Benton, T. G. (2010) Scale matters: the impact of organic farming on biodiversity at different spatial scales. *Ecology Letters* **13** (7): 858-869.

Gottfried, R., Wear, D. and Lee, R. (1996) Institutional solutions to market failure on the landscape level. *Ecological Economics* **18** (2): 133-140.

Hodge, I. and McNally, S. (2000) Wetland restoration, collective action and the role of water management institutions. *Ecological Economics* **35** (1): 105-118.

Hodge, I. and Reader, M. (2010) The introduction of Entry Level Stewardship in England: Extension or dilution in agri-environment policy? *Land Use Policy* **27** (2): 270-282.

Hopkins, J. (2009) Adaptation of biodiversity to climate change: An ecological perspective. Chapter 8, pages 189-212. *In* Winter, M. and Lobley, M. (eds). *What is Land For. The Food, Fuel and Climate Change debate*. Earthscan, UK.

House of Commons (2010) *Public Service Agreement Targets. Select Committee on Environment, Food and Rural Affairs Fourth Report. .* http://www.publications.parliament.uk/pa/cm200506/cmselect/cmenvfru/693/69308.htm [accessed 16th November 2010]. London, UK.

Ingram, J., Mills, J., Short, S., Reed, M., Gibbon, D., Dwyer, J. and Cheese, L. (2008) *Evaluation of key factors that lead to successful agri-environmental co-operative schemes: A literature review of behavioural change mechanisms in agriculture.* Cheltenham, GL50 2RH, Gloucestershire, UK.

Lawton, J. (2010) *Making space for nature: a review of England's wildlife sites and ecological network. Report to DEFRA.* http://ww2.defra.gov.uk/news/2010/09/24/nature-news/ [accessed 16th November 2010], London, UK.

Lowe, P., Woods, A., Liddon, A. and Phillipson, J. (2009) Strategic Land Use for Ecosystem Services. Chapter 1, pages 23-45. *In* Winter, M. and Lobley, M. (eds). *What is Land For. The Food, Fuel and Climate Change debate*. Earthscan, UK.

MacFarlane, F. (1998) Implementing agri-environmental policy: a landscape ecology perspective. *Journal of Environmental Planning and Management* **41** (5): p. 575-96.

Maxwell, J., Buttle, E., Kay, B., Pepper, S. and Walker, J. (2002) *Custodians of Change Report. Report of the agricultural and environment working group.* Scottish Executive. http://www.scotland.gov.uk/Resource/Doc/46729/0017653.pdf [accessed 28th September 2010].

McFarlane, F. (1998) 'Implementing Agri-environmental Policy: a Landscape Ecology Perspective'. *Journal of Environmental Planning and Management* **41** (5): p. 575-96.

Mills, J., Gibbon, D., Dwyer, J., Short, C. and Ingram, J. (2006) *Identification of Delivery Mechanisms for Welsh Top-Tier Agri-Environment Schemes.* University of Gloucestershire, Cheltenham.

Natural England (2009) *More choice for farmers; Natural England announces new options for the Environmental Stewardship scheme. .* [Online] http://www.naturalengland.org.uk/about_us/news/2009/120509a.aspx [accessed 5th November 2010].

Natural England (2010a) *Common land or shared grazing and upland ELS: Supplement to the Entry Level Stewardship (ELS) Handbook.* Environmental Stewardship (ES) Announcement No. 2/10 12 February 2010, Peterborough, UK.

Natural England (2010b) *Environmental Stewardship Update, November 2010, Issue 12, page 2 Table 1.* [Online] http://www.naturalengland.org.uk/Images/Environmental%20Stewardship%20Update%2012%20Final_tcm6-23195.pdf [accessed 5th November 2010].

Natural England (2010c) *Higher Level Stewardship Environmental Stewardship Handbook, Third Edition.* http://naturalengland.etraderstores.com/NaturalEnglandShop/NE227 [accessed 5th November 2010].

Natural England (2010d) *HLS targeting.* [Online] http://www.naturalengland.org.uk/ourwork/farming/funding/es/hls/targeting/default.aspx [accessed 24th November 2010].

Natural England (2010e) *Setting the record straight on HLS agreements.* [Online] http://www.naturalengland.org.uk/about_us/news/2010/221010b.aspx [accessed 5th November 2010].

Nix, J. (2011) *Farm Management Pocketbook, 41st Edition.* Agro Business Consultants Ltd, Melton Mowbray, Leicestershire, UK.

Öckinger, E., Schweiger, O., Crist, T. O., Debinski, D. M., Jochen Krauss, J., Mikko Kuussaari, M., Petersen, J. D., Pöyry, J., Settele, J., Summerville, K. S. and R., B. (2010) Life-history traits predict species responses to habitat area and isolation: a cross-continental synthesis *Ecology Letters* **13** (8): 969-979.

Oerlemans, N. J. (2004) *The role of farmer co-operatives in agricultural management*. Presentation for Deutscher Landschafsplegetag, Orcholz,.

Ostrom, E. (1999) Coping with tragedies of the commons. *Annual Review of Political Science* **2**: 493-535.

Policy Commission on the Future of Farming and Food (2002) *Farming and food: a sustainable future.* [Online]. Available by Report of the Policy Commission on the future of farming and food www.cabinet-office.gov.uk/farming (posted January 2002).

Prager, K. and Vanclay, F. (2010) Landcare in Australia and Germany: comparing structures and policies for community engagement in natural resource management. *Social Research Perspective* **11** (3): 187-193.

Pretty, J. (2003) Social capital and the collective management of resources. *Science* **302** (5652): 1912-1914.

RELU (2010) *Shaping the nature of England: policy pointers from the Relu programme.* Centre for Rural Economy, Newcastle University, Newcastle upon Tyne, England.

Renting, H. and van der Ploeg, J. D. (2001) Reconnecting nature, farming and society: environmental co-operatives in the Netherlands as institutional arrangements for creating coherence. *Journal of Environmental Policy and Planning* **3** (2): 85-101.

Rodgers, C. (2009a) Nature's place? Property rights, property rules and environmental stewardship. *The Cambridge Law Journal* **68** (3): 550-574.

Rodgers, C. (2009b) Nature's place? Property rights, property rules and environmental stewardship. *Cambridge Law Journal* **68** (3): 550-574.

Rodgers, C. (2010) Reversing the 'Tragedy' of the commons? Sustainable management and the Commons Act 2006. *The Modern Law Review* **73** (3): 461-486.

Scottish Executive (2001) *A forward strategy for agriculture.* Edinburgh, Scotland, UK.

Slangen, L. H. G., Jongenell, R. A., Polman, N. B. P., Guldemond, J. A., Hess, E. M. and van Well, E. A. P. (2008) *Economische en ecologische effectiviteit van gebiedscontracken. (Economic and ecological effectiveness of collective nature and wildlife conservation contracts).* Statutory Research Tasks Unit for Nature and the Environment, Wageningen University, Wageningen, The Netherlands.

Tscharntke, T., Klein, A., Kruess, A., Steffan-Dewenter, I. and Thies, C. (2005) Landscape perspectives on agricultural intensification and biodiversity - ecosystem service management. *Ecology Letters* **8** (7): 857-874.

Webb, J. R., Drewitt, A. L. and Measures, G. H. (2010) *Managing for species: Integrating the needs of England's priority species into habitat management. Part 1 report.* Natural England Research Report No. 024, Sheffield, UK.

Whitby, M. (1994) What future for ESAs? p. 1-24. *In* Whitby, M. (ed). *Incentives for Countryside Management: The Case of Environmentally Sensitive Areas.* Wallingford: CAB International.

Whittingham, M. J. (2007) Will agri-environment schemes deliver substantial biodiversity gain, and if not why not? *Journal of Applied Ecology* **44** (1): 1-5.

Wilson, G. A. (2004) The Australian Landcare movement: towards 'post-productivist' rural governance? *Journal of Rural Studies* **20** (4): 461-484.

**Appendix 1. Key changes to direct upland support payments**

| | |
|---|---|
| **1975** | Introduction of Beef Variable Premium Scheme (BVP) in UK. Temporary scheme, subject to renegotiation each year in Brussels. Price support mechanism triggered by average weekly prices falling below monthly target price. |
| **1976** | Introduction of Hill livestock Compensatory Allowance (HLCA) - UK scheme to aid suckler cow and breeding ewe producers in Less Favoured Areas. Headage payments. |
| **1980** | Introduction of Suckler Cow Premium (SCP) (to increase the returns to beef producers without supplementing dairy farm incomes). Headage payments subject to national quota. |
| **1981** | Introduction of Sheep Annual Premium (SAP) scheme. Headage payments. |
| **1989** | Beef variable premium ends. Beef Special Premium (BSP) introduced in UK - headage payments made on male cattle aged at least 7 months. Claims limited to 90 animals a year per producer. |
| **1991** | Sheep variable premium phased out. Limits on number of ewes eligible for SAP full rates. Beyond these limits half payment made SAP. Supplementary SAP payments brought in for those in Less Favoured areas. |
| **1993** | Second BSP payment introduced for male cattle aged 20 months. Finite limit on number of ewes supported by SAP. Extensification payments introduced for recipients of SCP and BSP rewarding low stocking densities (based upon animals claimed for under BSP, SCP, SAP and dairy cows needed to produce any milk quota held). |
| **1997** | BSP payments now only paid to bulls once in animal's lifetime must be aged at least 7 months. |
| **2000** | Agenda 2000 - Introduction of slaughter premium to support cattle producers. Final year of HLCA. Heifers may now make up to 20% of a producer's SCP claim. Extensification premium no longer linked directly to BSP and SCP, all animals over 6 months on holding are now included in calculation of stocking density. |
| **2001** | Removal of 90 head limit on BSP. Introduction of Hill Farm Allowance (HFA) area based payment to support farming (suckler cows and breeding ewes) in less favoured areas. Enhancements available for environmental criteria. |
| **2000-2002**: | Agenda 2000 - Increases in euro BSP and SCP premium rates as compensation for intervention price cuts. |
| **2004** | Removal of minimum heifer requirement for SCP. Last year of direct subsidy payments (e.g. SCP, BSP, SAP, Extensification scheme and Slaughter premium). |
| **2005** | Introduction of Single Payment Scheme and Environmental Stewardship. |
| **2008** | HFA limited to the SDA. |
| **2010** | Replacement of HFA with Uplands ELS. All farm types in SDA eligible. |