POLICY INTEGRATION FOR SUSTAINABLE AGRICULTURAL LANDSCAPES: TAKING STOCK OF UK POLICY AND PRACTICE

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Abstract

This paper examines English experience with agri-environment schemes as a tool to promote sustainable landscapes. Evidence is drawn from policy and academic literature and selected recent research. Performance is assessed by reference to key notions of sustainable landscapes: spatial coherence, functionality and socio-cultural meaning. Whilst now widespread across England and well-supported by the environmental community, agri-environment schemes suffer from weaknesses in design and delivery including insensitivity to the evolving needs and concerns of farming businesses, the wider policy context, and thereby to the integrity of the landscape. An upland case study illustrates problems of poor communication and advice, narrow and inconsistent delivery, and under-recognition of social issues which together work against more sustainable agricultural landscapes. In the context of emerging EU and global challenges, a shift of emphasis towards systemic approaches, developed territorially in partnership with farmers, is needed. Emerging non-policy innovations and new initiatives may offer lessons for an improved approach.

Keywords: agri-environment; policy evaluation; sustainable agricultural landscapes; policy design and delivery; new collaborative approaches.

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Introduction

Promoting and supporting more environmentally sustainable agricultural landscapes has been a feature of rural policy in Britain for over 30 years. Through this period, agri-environment schemes have developed as the dominant policy approach, working alongside incremental environmental regulation of the farm sector. Given an increasingly uncertain future in both environmental and economic terms for Europe, compounded by challenges of climate change and rising global food and fuel demand (EC, 2010) , it is timely to reflect upon the achievements and shortcomings of current policy. This paper critically reviews UK agri-environment policy in the pursuit of sustainable agricultural landscapes, with particular emphasis upon England- tracing policy evolution, analysing performance and suggesting improvements. Its evidence-base includes recent evaluation studies, government and NGO policy documents, as well as direct engagement in the stakeholder community.

In the following analysis 'sustainable agricultural landscapes' refers to landscapes shaped largely by farming activity, both in the past and in the present. Such landscapes dominate rural Europe, particularly England, where over 75% of the land area is devoted to agricultural management. A series of recent papers summarise valuable concepts which have been explored by a variety of earlier authors, defining the characteristics of agricultural landscape sustainability. Firstly, sustainability in landscapes clearly implies the protection and enhancement of natural and cultural

assets, including biodiversity, water, soils and geology, as well as historic and archaeological features and the built environment (Antrop, 2005). Potschin and Haines-Young (2006) argue that landscape sustainability also has an unavoidably functional perspective, in that a sustainable landscape maintains over time the outputs of ecosystem goods and services that people value or need. Thus processes are just as important as physical components. Blaschke (2006) argues that spatial pattern in landscapes matters for sustainability, because spatial context can have a fundamental influence on meaning and value. Therefore, sustainability assessment of landscapes must also take account of the coherence of landscape structure. Finally, Brunckhorst et al. (2006) suggest that assessing sustainability requires the analysis of stakeholders' views and beliefs, including the relationships between people, cultures and landscapes and how these are valued. The European Landscapes Convention makes reference to all these facets, in its approach to landscape protection (which particularly considers landscape's components and structure); to management (which recognises the functionality of landscape); and to landscape planning (which emphasises the importance of public participation, and hence 'people' values)(Council of Europe, 2000). The term 'sustainable landscapes' thus encapsulates more than a collection of natural assets in rural space; it requires resilient functions and coherent spatial relationships, and it implies a recognition of peoples' interaction with land and a commitment to the resulting cultural and social values.

The paper is organized in four parts: part 1 reviews the UK policy approach and the central role of agri-environment schemes; part 2 summarises weaknesses in the policy mix in respect of sustainable agricultural landscapes; part 3 draws from recent research to analyse the institutional causes and consequences of these weaknesses; and part 4 combines this with insights from contemporary non-policy innovations to suggest a change in approach for the future.

Part 1. UK policy

Since the 1980s, agri-environment schemes have been a key element of UK policy, in which the state contracts with farmers to deliver environmental goods and services, over a multi-annual period. The UK pioneered this approach within Europe (Buller, 2012), and it is now enshrined within the EU Common Agricultural Policy, under the 'second pillar' of measures to promote rural development (CEC, 2005). From 1985, steady growth in agri-environmental schemes in England and Wales, and then across all regions of the UK, means they now cover around 45 per cent of total farmed land (Defra, 2012a). Early schemes targeted specific geographical territories – designated Environmentally Sensitive Areas - or identifiable landscape types deemed most in need of enhanced environmental management (e.g. uplands, historic landscapes). Initially attempting to arrest negative landscape change, schemes now incorporate wider management actions (input reduction, habitat restoration, creation of new features, etc.) in pursuit of biodiversity, heritage, and resource protection goals (Boatman et al, 2008). Early schemes were 'narrow and deep' – seeking targeted and relatively ambitious change (CEC, 1998; ECA, 2011). More recent, so-called entry-level schemes ('broad and shallow' – aiming at wider and simpler environmental management) offer many more farmers a menu of management options involving less radical change. Introduced between 2005 and 2007, they significantly increased overall scheme coverage and expenditure, particularly in England (Defra, 2012b). UK agri-environment agreements now comprise a variety of management designed to maintain and restore less-intensive practices as well as supporting management of land at risk of abandonment, and over half of all UK farms participate. However, uptake has slowed in recent years, notably in England and Wales (Defra, 2012b and JNCC, 2012), as a combined result of budgetary restraint and reduced farmer demand.

A defining feature of UK agri-environment schemes has been a binding contract between a farmer or farming business, and the public, represented by a government department or agency, through

which prescribed kinds of management on particular areas of land are guaranteed by the farmer in return for regular payments. Key to this approach is the specification of contractual obligations, which generally requires explicit management prescriptions (do's and don't's in respect of parcels of land and/or features). Hence agreements are overwhelmingly made at the level of individual farms or holdings, which provides a local landscape dimension, in both a physical and an operational sense.

Agri-environment schemes evolved alongside other policy mechanisms, including an increasing range of regulatory approaches , largely driven by EU-level developments in water and biodiversity policy (Farmer et al, 2012), as well as investment aids, particularly for landscape feature restoration and resource protection (e.g. riparian fencing). Targeted advisory projects are also used for some topics such as diffuse pollution of water. However these kinds of policy instrument represent a small minority of total UK policy expenditure on securing environmental benefits from farming, with much the greater share devoted to annual management payments made within agri-environment contracts (Dwyer et al, 2008).

Explicit policies for landscape in the UK over the same period have been more conceptual and less directly interventionist in respect of farming. Landscape designations such as National Parks, which regulate non-agricultural development, and landscape characterization and monitoring within Landscape Character Assessments (Swanwick and LUC, 2002), have a largely indirect influence, by informing the selection and targeting criteria for agri-environment schemes, alongside other environmental goals. They also have some significance in respect of built development, through the spatial planning system. This influence, whilst potentially significant at a strategic level, is rendered weak in its practical impacts on the ground by the focus of schemes on individual farm-holdings and the demand-led nature of the planning system.

Taking stock of more than 25 years of experience, what has this policy approach achieved? As a brief summary, evidence suggests the following.

• Agri-environment schemes have been popular with farmers, especially in marginal farming areas – mainly because they provide valuable income and clarity of commitment. When capital grants are included, they can also help to support the local economy and community (Boatman et al, 2008, Mills et al, 2010a).

• Agri-environment management prescriptions have been designed for many different environmental goals, with multiple options covering everything from the preservation of archaeological remains to the creation of foraging areas for migratory birds, as well as opportunities for informal recreation and education (Natural England, 2009b, ECA, 2011, Boatman et al, 2008). Initially based largely upon received wisdom about longstanding practices, today they are informed by research and expert knowledge from a wide range of disciplines.

• Evidence of widespread environmental benefit from the schemes is elusive (Klijn and Sutherland, 2003). However numerous local successes exist (Boatman et al, 2008, Joint Links, 2011, Natural England, 2009b) and many stakeholder organizations express the view that agri-environment schemes remain the most significant ingredient in successful policies for sustainable agriculture (e.g. Birdlife, 2011, Joint Links, 2011).

Overall, agri-environment schemes have been significant in encouraging the incorporation of environmental considerations into day-to-day land management practice. By linking public funding to specific goals which incorporate some landscape values and attributes, they make explicit societal recognition of these values at a local scale within the individual management contracts.

Part 2. Weaknesses and gaps

The focus of effort and hence the positive outcomes of the agri environment scheme approach are largely at a farm scale. However there is growing evidence that the approach suffers from significant limitations in protecting and promoting sustainable agricultural landscapes, in a wider sense. Unfortunately there have been few detailed analyses of the landscape and community effects of schemes, but policy reviews and recent case study work in England, offer some insights. The identified weaknesses are outlined briefly here, whilst the research evidence and findings concerning underlying policy causes are analysed in more detail in section 3.

Issue 1: A lack of spatial coherence at the landscape scale?

As a whole, UK policy exhibits a degree of coherence at a national level, with 'provider-gets' schemes sitting above a baseline of 'polluter pays' rules and conditions (Figure 1). However, at the level of distinct agricultural landscapes it operates more as a bundle of different measures applying simultaneously to individual farms, not explicitly co-ordinated or tailored to local conditions. Policies follow largely centralized designs, using a menu-based approach to tailor agreements to individual farm circumstances. The menu comprises standard prescriptions of different management actions; each with detailed requirements to be followed, from which farmers and/or advisors select. This means that management instruments are frequently insufficiently sensitive to local conditions to achieve desired environmental, and especially landscape-related, outcomes (Boatman et al, 2008). Standardised management approaches across a territory will not generate or sustain micro-variation within a landscape, which may be important in sustaining certain ecosystem functions. The lack of local-level integration of the various policy instruments becomes an issue when, as is increasingly the case, policy-makers seek an ecosystem approach and call for demonstrable change 'at a landscape scale' (e.g. Defra, 2011; Natural England, 2009a). Natural England (NE) noted that: 'To date evidence for the impact of AES on landscape has tended to focus on measuring outputs on landscape components…. rather than providing a holistic understanding …. …there is currently little understanding of how such changes add up to impact on the overall character and quality of the landscape.'(Natural England, 2009b). In 1990-2003, NE found both negative and positive trends in a variety of landscape contexts across England (CQC, 2007), with no clear relationship to scheme uptake.

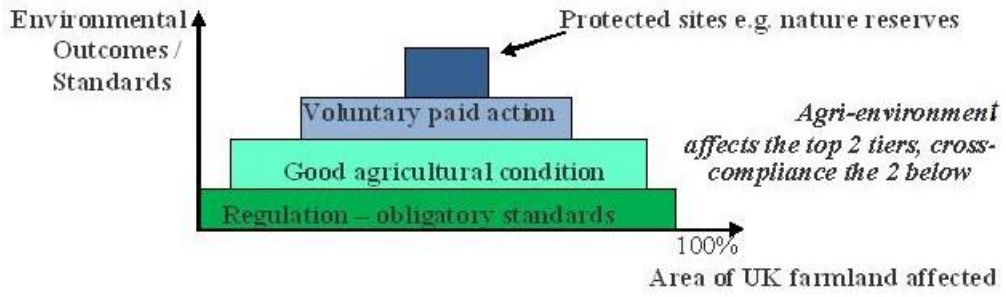


FIGURE 1

Equally significant, the prescription approach removes the incentive for environmental innovation by farmers, as they are contractually bound to deliver just what is prescribed in the agreement – no more and no less (Burton et al, 2008). Contradictory signals from other policies such as 'mainstream' support payments of the CAP, and policies for disease control and food safety, can also reduce the efficacy of the overall policy mix in particular landscape contexts, creating conflicting incentives. For example, biosecurity policy as currently applied across much of southwest England acts to dis-incentivise extensive livestock grazing for habitat maintenance: if a herd is at high risk of catching

Bovine Tuberculosis, all cattle may be housed, curtailing grazing regimes aimed at other outcomes. Finally, underlying economic drivers still constrain many farmers' 'room for manoeuvre' in respect of their response to schemes, even though they might wish to adopt more sustainable practices (Van der Ploeg, 1994, Dwyer et al, 2007a). These factors can completely change the realized impacts of agri-environmental policies in different landscapes.

I*ssue 2: improving functional sustainability – the challenge of effective knowledge exchange*

Persuading farmers to change practices in order to improve landscape functionality is a complex task, requiring effective knowledge exchange between environmental scientists and farmers (Dwyer et al, 2007a). Raising farmer awareness, promoting environmental understanding, and encouraging farmer commitment and follow-through to achieve lasting impact are essential. However there has been an enduring tension in agri-environmental policy delivery between providing free or part-subsidised advice to help enhance scheme outcomes, and seeking to minimise scheme delivery costs so as to maximise the efficiency of spending. Policy auditors and evaluators as well as farming stakeholders have raised concerns about the relatively high level of overheads associated with agri-environment schemes, which in their first two decades tended to amount to between 25 and 40 per cent of total scheme spending (CRER and CJC, 2002), compared to the much lower overheads of other support schemes in the CAP. However an important element in the agri-environment 'overhead', as captured in the figures which examine scheme costs per unit output, derives from the costs of providing supporting information and advice. In a 2009 review, 'the costs to Natural England of delivering AES in 2008–09 were just over £13 million – 3.6% of the funds paid' (Natural England, 2009b), reflecting both the significant expansion of payments under the 'broad and shallow' approach which has minimal advisory support, as well as significant reductions in delivery costs as a proportion of total scheme value, for higher-level 'narrow and deep' schemes. The implication is that spending on advisory support to deliver the schemes (in respect of in-house staff time, at least), has been reduced significantly. The characterisation of advice as an administrative overhead is an unfortunate framing: in a situation where the precise outcomes of prescribed management are often uncertain, continuing advice on how to translate support into outcomes could be characterised as a legitimate outcome in its own right. Many studies have affirmed its importance (Röling and Wagemakers, 1998; Siebert et al, 2006), yet evidence suggests this specific and key role has been under-provided in the policy mix, at least partly in an effort to contain scheme delivery costs (e.g. Boatman et al, 2007).

Issue 3– the people part: landscape and socio-cultural relationships

The social aspects of landscape sustainability - the people, customs and values of 'agri-cultures' and their enduring relationships with specific rural landscapes (Pretty, 2002, Council of Europe, 2000) – are almost completely ignored in the English approach. The EU's Less Favoured Area policy which traditionally applied in all of the UK uplands had a combined social and environmental purpose (to maintain farming in marginal areas often of high natural value), but this has been phased out in England and Wales since 2010. Other than this, the UK government has no explicit social goals for farmed landscapes (in contrast to other EU Member States such as France – Pereira et al, 2010). Since the 1980s continuing structural change towards larger commercial farms in most sectors, managed by fewer people, has brought significant social costs which, it can be argued, also have negative implications for landscape sustainability in both cultural and environmental terms (Hall and Pretty, 2006, CRC, 2010). Some studies have examined how agri-environment schemes affect economies and communities (e.g. Harrison-Mayfield et al, 1996; Mills et al, 2010a), but little attention has been devoted to how they affect farmers' evolving relationship with their landscape. Some recent research, discussed below, indicates some important negative trends in this respect.

In sum, agri-environment schemes exhibit critical gaps in respect of promoting spatial coherence, landscape functionality, and positive people-nature interactions. Recent research pinpointing these

weaknesses is discussed in Part 3, and the underlying policy design and delivery drivers are briefly analysed to show how they may contribute to the situation.

Part 3. Analysis of issues – the case of the English Uplands

A recent evaluation of policy processes and impacts in English upland landscapes (Dwyer et al, 2010a) clarifies the nature and source of these gaps. The one-year case-study, part of a bigger EU policy project examining rural development impacts, used a mixed-method, iterative and participatory approach. Primary and secondary sources (Defra June survey trends, Farm Business Survey, Magic maps and collated scheme data) and policy studies and documentary evidence on farm structural and landscape change in two upland landscapes (the Forest of Bowland, and Exmoor National Park) was combined with twenty-four in-depth, semi-structured farmer interviews with a broadly representative group of farms, and two follow-up workshops. The interviews examined farm change and the causes of change since 2000, and looking ahead to 2014, on each farm, and the workshops sought to identify common patterns and business strategies in response to policy, in each location. In addition, the study built upon a detailed analysis of the delivery approach for agri-environment schemes in England in 2009, conducted within the same EC-funded project (RuDI – Rural Development Impacts, Workpackage 3). These sources enabled the assembly of a conceptual model of the relationship between agricultural and agri-environment policies, farm decision-making, changes in farming practices and farm structures and ultimately, resulting impacts upon the landscape.

The main upland areas of northern, western and southwest England are complex and highly-valued landscapes shaped by centuries of management, involving the inter-connected use of different landscape elements – in-bye, in-take, open moor and streamside or valley woodlands, often delineated by dry-stone walls or hedges, with dispersed farmsteads, farm buildings and villages. Over the centuries, farming businesses have played a central role in shaping these landscapes and they have been target areas for agri-environment schemes. As a result, the majority of farmland in the English uplands is enrolled in these schemes and has been, for at least a decade.

Initial analysis of scheme delivery in these areas highlighted a chronology of funding discontinuity and shifting priorities, which had led to a particular focus since 2000 upon using the schemes primarily to achieve short-term agency targets for the condition of upland SSSI habitats. Schemes had thus effectively 'cherry-picked' the most valuable habitats (open moor, and less improved/least productive pasture) for specific funding and sometimes radical management intervention, prohibiting inputs, requiring winter stock removal and blocking up drains. Whilst whole holdings in these landscapes were frequently entered into the schemes, the management requirements for in-bye land were minimal and both funding and management ambitions were strongly focused on 'high nature value' habitats.

At the same time, however, most of these farms remained heavily dependent upon other CAP subsidies for their viability. This mainstream support had been declining since 2003, as a combined result of EU and UK decisions (including, ironically, a decision to top-slice the subsidies in order to create room for 'broad and shallow' agri-environment expansion across other parts of the country). Under these circumstances, upland farms continued to make changes designed to increase their overall productivity in order to cope with continued income pressure. But because they were contractually constrained by the requirements of agri-environment schemes on their least-productive land, most chose to increase the intensity of management on their in-bye; or to increase the size of their holding to increase output and spread overhead costs (which removed 'starter holdings' for the next generation of farmers from the local landscape); and/or to rent additional grazing land, often at some distance from the holding, to which young stock were shipped each year

(thus potentially weakening 'hefting' ties between sheep flocks and their land). Many also sought to diversify their household income, thus bringing in money from other activities, but at the same time reducing the availability of labour and/or quality of management for farming. Animal disease control policies, designed entirely in isolation from agri-environment policies, were stimulating some farmers to confine indoors those stock that were deemed to be at risk of infection or transfer (in Exmoor, this was particularly the case for cattle at risk of bTB), reducing grazing diversity on the hills.

Taken together, these influences create a gradual, but visually apparent, zoning of a landscape, which was hitherto functionally integrated and visually coherent. 'Conservation management' under agri-environment schemes, applied piecemeal at a field-by-field scale, was thus contributing to ultimately destructive change at the landscape scale, weakening its spatial coherence, its overall functionality and its cultural value (figure 2).

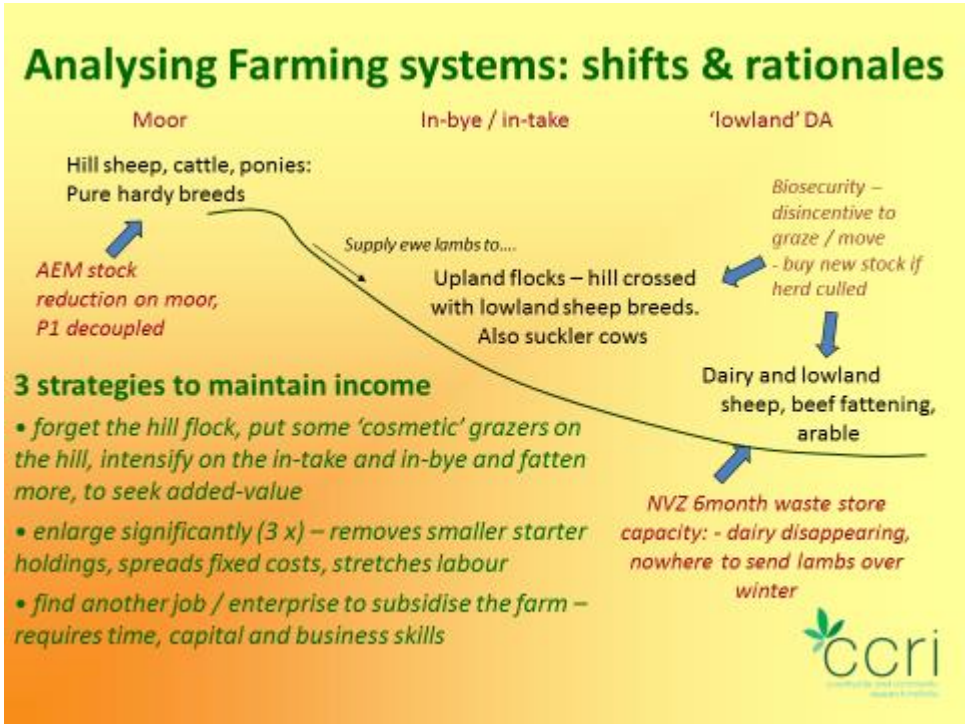
Figure 2 – landscape zoning: Winsford Hill, Exmoor

The analysis further examined how farmers' understanding and perceptions about their role in landscape protection and management were affected by their experiences with agri-environment schemes. While joining a scheme or renewing a pre-existing scheme agreement provides some environmental management advice as part of securing the contract, the delivery analysis showed that each farmer could expect to receive a follow-up visit from Natural England only once or twice during its ten-year lifetime. It also confirmed a trend since 2005 of cut-backs in advisory support for the schemes, particularly support for pre-existing contracts. Farmers expressed widespread disappointment at a perceived lack of positive feedback or opportunity for dialogue about the emerging results of their agreements, and several claimed that management prescriptions in their schemes were unlikely to deliver the agreed environmental goals, because the land was not responding as had been anticipated. This was most common where reduced grazing on upland vegetation had failed to regenerate heathland and instead enabled the spread of molinia-dominated swards, which change the landscape's appearance, reduce its value for biodiversity and grazing and

its accessibility for walkers (figure 3).

However farmers expressed reticence about raising these concerns with the authorities, for fear of triggering a cross-compliance check. Farmers' negative perceptions of their relationship with the delivery agency, and of their passive status as implementers of prescribed management conditions, rather than equal partners in a landscape management experiment, meant that potentially valuable opportunities for shared learning to enhance landscape outcomes were lost. And this, in turn, was affecting their longstanding relationships to the land and its stewardship. As a result of structural changes and survival strategies described above, many farmers working in these landscapes struggled to cope with the day-to-day demands of managing ever-larger numbers of stock over large land areas, with negative social and health consequences. Similar patterns have been noted elsewhere (CRC, 2010; Lobley et al, 2004). Many interviewees spoke passionately about how they wanted to see farming traditions sustained by the next generation, but envisaged fewer families being willing or able to do this successfully.

The case study thus showed how a combination of policy factors, in which agri-environment schemes play a central role, was undermining overall landscape coherence, functionality and socio-cultural value. The effect was to encourage landscape fragmentation, and promote business strategies working against long-term landscape sustainability. The process is depicted diagrammatically in Figure 4.



Some of the reasons why agri-environment schemes fall short of sustainable landscape ambitions lie in the drivers which have shaped their design and delivery. One common problem an overly-strong audit mentality, limiting management options to tasks that can be easily and independently verified by those performing compliance checks. This has several negative effects. Firstly, it creates reluctance to use management prescriptions which allow farm-level judgment of the appropriate circumstances in which to act, because this would require an auditor to assess the quality of that judgement, rendering the audit process more costly and potentially contentious. Secondly, it works against prescriptions for which outcomes are difficult to measure (e.g. training or advice, and actions

to reduce, rather than totally eliminate, certain inputs or grazing). Finally, among both farmers and the officials negotiating agreements, concern about the financial risks associated with non-compliance can lead to missed opportunities (i.e. tricky management problems are deemed too risky to address with public funding, so excluded from scheme agreements). This encourages agreements that are simplistic and which therefore fail to encourage optimal responses for each landscape context. Thus, farmers are not being rewarded but risk facing penalties if they use their initiative or longstanding knowledge of their own landscape and its behaviour to influence management. As Lee noted elsewhere: '[designs driven by an audit perspective] militate against effective delivery: they are too focused on processes and rules rather than outcomes; too focused on micro issues rather than strategy; and strongly skewed against entrepreneurship' (Lee, 2001).

Discontinuity in funding and changing scheme priorities also create multiple obstacles to effective performance. Sustainability in agricultural landscapes requires resilience over the longer term: farm businesses are rarely short-term ventures and successive generations have shaped the present attributes of farm holdings and their inter-relations with the landscape. But policy timescales are much shorter: the delivery analysis showed that agri-environment budgets in England, for instance, have altered frequently from one year to the next, for reasons which have not always been clear to the farming community (although wider economic pressures have undoubtedly played a part). This has generated a 'tap on, tap off' pattern of scheme promotion; with some periods when all farmers are strongly encouraged to consider and apply for the most ambitious schemes, and others when the delivery agencies have little funding for new agreements, so focus only on tightly-defined 'priority' situations. In both England and Wales, agri-environment policies have suffered from major institutional reorganisations which have triggered abrupt changes in targets and delivery arrangements (e.g. negatively affecting the number of advisors and tightening agreement selection criteria). These patterns have created a degree of cynicism and disengagement among both farmers and scheme delivery teams (public and private) within the two upland areas studied. It also worked against continuity in sustainable management on all but the most high-priority sites, which again mitigated against effectiveness at a landscape scale.

A further problem has been agency capacity. Analysis of the delivery system in England revealed how, by 2008-9, agri-environment schemes were being delivered by relatively low-paid and often inexperienced advisory/extension staff (linked to high staff turnover), whom farmers claimed gave little technical support and almost no management feedback. Of the two upland areas, one retained a longstanding scheme adviser who was respected and praised by interviewees but who was physically unable to maintain contact with many of them because resources were too tight. Accumulating evidence suggests this is a false economy (Dwyer et al, 2007a; Boatman et al, 2007, Sutherland et al, 2013), discouraging the renewal of agreements and engendering mistrust of government's commitment to the schemes. It was cited as encouraging a culture of 'lip service' by both farmers and advisers in respect of scheme goals, in favour of simply doing what prescriptions require.

In sum, a range of factors may negatively influence the design and delivery of agri-environment schemes in ways which weaken their ability to deliver sustainable landscapes. These undermine scheme goals, fail to address spatial coherence, functionality and cultural relationships in these landscapes, and have created a piecemeal, fragmented and insufficiently context-sensitive policy approach, underplaying the importance of the relationships between farming systems development, farm business decision-making, and the collective impacts of both processes on the landscape.

Part 4. Innovation, and directions for future policy

The discussion in part 3 suggests a need for new policy approaches focused on holistic visions of sustainable landscape which recognise functionality and spatiality, and which, critically, enable farmers' own perspectives, business motivations and landscape knowledge to contribute more positively to creating these visions. Taking a broad view, there are examples of alternative approaches in the voluntary and private sector, which appear to have avoided some of the weaknesses of established policy (e.g. Dwyer et al, 2007a; Mills et al, 2008; Mills et al, 2010b, ENRD, 2011). Whilst further research is needed, some common characteristics can be identified.

Several examples of non-policy-driven initiatives promoting sustainable agricultural landscapes involve collective action by farmers and/or local actors; some partly 'within' a formal agri-environment policy framework; some entirely outside it. Other collectives work as communities of shared interest rather than through spatial collaboration, where farmers become part of a wider network with explicitly environmental aims. In either model, these collectives have enabled farmers to engage with environmental learning along with their peers, exchanging ideas and developing new approaches, in a context over which they retain control. Spatial coherence and functionality can increase when farmers and others work together to make decisions about local land management, and successful collaboration affirms farmers own experiences, and may offer an environmental 'marketing edge' which connects with the business motivations of farmers and offers scope for enterprise development.

As an example, the NGO 'Linking Environment And Farming' (LEAF), established in 1991, promotes Integrated Farm Management techniques, and now has 1,600 subscribing farmer members, mainly from the UK. It offers a self-help environmental audit, peer support and training, as well as guaranteed marketing opportunities via a bespoke supermarket quality 'Marque'. A small study based upon in-depth interviews with ten LEAF members found that they identified significant financial, environmental and (perhaps most surprisingly) social benefits from membership, explaining how being part of LEAF gives them new confidence to engage with non-farming neighbours and feel proud of what they are doing, as responsible stewards of the land (Mills et al, 2010b). The approach recognises farmers' socio-cultural relationships with landscapes, emphasising their autonomy, sense of self-respect and initiative.

Farmer-collective approaches are an emerging feature of changing rural governance structures across Europe (ENRD, 2011b), especially in the context of food production (Marsden and Murdoch, 2006; Morgan et al, 2006; Maye et al, 2007). One common feature is generation of a strong collective ethic, increasing farmers' commitment to the underlying goals of sustainability (Mills et al, 2008). It also represents independence, enabling a desire by farmers and other local actors to gain ownership of the environmental agenda, which is a key factor in the emergence of agri-environmental co-operatives in the Netherlands, for example (ENRD, 2011b). There are parallels with local community sustainability initiatives, as encapsulated in the notion of 'place-making' (Healey, 2007). Also critical from a landscape perspective is the ability of some groups to plan and pursue co-ordinated management action across significant areas of land, working directly at a landscape scale.

How might policy encourage such approaches? European society is seeking an increasingly complex mix of goals from the management of farmed landscapes, combining sustainability with productivity in respect of food and energy (Dwyer, 2010b). Ostrom (2010), reviewing similar trends in respect of global commons, calls for polycentric policy, less 'one size fits all', and more flexibility for different scales in governance, to increase innovation, learning, adaptation, and more sustainable outcomes. This requires moving away from centralized policy design, allowing more detailed characteristics of policy tools and their delivery to be determined within specific spheres of application, and partnership with a range of relevant local actors. Institutionally, it echoes an EU model used

extensively in other areas of environmental policy, of a 'framework approach' in which principles, targets and strategic aspects ofdelivery (e.g. obligations for stakeholder involvement) are agreed supra-nationally or nationally, but detailed policy processes are supported and designed at local level. The model could also be seen as similar to the traditional LEADER approach in rural development (Ray, 2000; Lukesch, 2003), which has rarely been applied to agri-environment actions (Kahila, 2010).

Under this model, expert and lay knowledge and experience could be pooled locally, so that farmers experiment in 'communities of practice', working to achieve pre-agreed, landscape-scale goals. There could be more focus on sustainable farm business strategies, rather than environmental prescriptions specified at field or farm level, although higher-level environmental outcomes would remain central. One effect would ideally be to replace prescriptive administration and audit with a framework of agreed goals and local collaboration to provide peer-support/policing. Some examples of this kind of approach were piloted within the RELU research programme (Whatmore et al, 2010), and UK policy is beginning to pick up these ideas. In July 2011, an NE white paper (Defra, 2011) announced a series of experimental initiatives designed to achieve a step-change in nature provision in different areas around England, working through local partnerships. At the same time, the Environment Agency announced significant funding to pursue local initiatives for water quality, based around integrated catchment delivery. In this, both agencies placed emphasis upon local collaborative working at a landscape scale, and flexibility in the choice of management tools. It is too soon to assess whether these moves mark a real change of direction in public policy thinking, or indeed whether they will amount to, or achieve, anything significant or lasting on the ground. But if they can provide opportunities for local actors to develop a more holistic vision for sustainable agricultural landscapes, recognising functionality, promoting spatial coherence and putting social and cultural value back into the picture, something useful could be learned.

REFERENCES

Antrop, M. (2005) Sustainable landscapes: contradiction, fiction or utopia? Landscape and Urban Planning 75 (2006) 187–197.

Birdlife International (2011) New Challenges, new CAP: Birdlife International's Vision for the Future of the EU Common Agricultural Policy; Brussels, Birdlife International.

Blaschke, T. (2006). The role of the spatial dimension within the framework of sustainable landscapes and natural capital. Landscape and Urban Planning. 75 (3–4), 198–226.

Boatman, N., Jones, N., Garthwaite, D., Bishop, J., Pietravalle, S., Harrington, P. and Parry, H. (2007) Evaluation of the operation of Environmental Stewardship. Defra project no. MA01028 final report, August 2007. London: Defra.

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-environmental schemes. Report to LUPG. Available to download from www.lupg.org.uk ; accessed 1 December 2011.

Buller, H. (2012) Chapter 12 – Greening and Agriculture, in Curry, N. and Moseley, M. eds. A Quarter Century of Change in Rural Britain and Europe: reflections to mark 25 years of the Countryside and Community Research Institute. CCP, Gloucester.

Burton, R. J. F., Kuczera, C. And Schwarz, G. (2008) Exploring farmers' cultural resistance to agri-environment schemes. Sociologica ruralis, vol.8 no.1, pp16-37.

Brunckhorst, D., Coop, P., Reeve, I. (2006). 'Eco-civic' optimisation: a nested framework for planning and managing landscapes. Landscape and Urban Planning. 75 (3–4), 265–281.

Centre for Rural Economics Research and CJC consulting (2002) Economic Evaluation of Agri-Environment Schemes. Final Report to the Department of Environment, Food and Rural Affairs. Cambridge University Department of Land Economy, Cambridge.

Commission of the European Communities (1998) Working Document, State of application of regulation (EEC) n° 2078/92 : Evaluation of agri-environment programmes, VI/7655/98, 9.11.1998. Summary available at: http://ec.europa.eu/agriculture/envir/report/en/2078_en/report.htm Accessed 1 December 2011

Commission of the European Communities (2005) Agri-environment Measures Overview on General Principles, Types of Measures, and Application. CEC, Brussels

Commission for Rural Communities (2010) High ground, high potential – a future for England's upland communities. CRC, Cheltenham.

Council of Europe (2000) The European Landscape Convention. Florence: Council of Europe.

Countryside Quality Counts (2007) Tracking change in the character of the English Landscape. Second assessment. At http://webarchive.nationalarchives.gov.uk/20101219012433/http://countryside-quality-counts.org.uk/pubs_2ndAssess.html

Department for Environment, Food And Rural Affairs (2011) The Natural Choice: securing the value of nature. Cm8082. London: HMSO.

Department for Environment, Food and Rural Affairs (2012a) Agriculture in the United Kingdom, 2011. HMSO, London. At: http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-crosscutting-auk-auk2011-120709.pdf

Department for Environment, Food and Rural Affairs (2012b) Agricultural Change and Environmental Observatory Monitoring Framework: indicator A3 data sheet. At: http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-environ-obs-indicators-a3-120608.pdf

Dwyer, J., Ingram, J., Mills, J., Taylor, J., Blackstock, K., Brown, K., Burton, R., Dilley, R., Matthews, K., Schwarz, G. and Slee, R. W. (2007a) Understanding and influencing positive environmental behaviour among farmers and land managers - a project for Defra by CCRU /MLURI. ProjectID=14518. Department for Environment, Food and Rural Affairs, London.

Dwyer, J., Mantino, F., Schiller, S., Baldock, D., Farmer, M., Knickel, K., Prazan, J., Trantinova, M., Lewis, N., Thomson, K., Kambites, C., Kirwan, J., Tarangioli, S., Monteleone, A., Bolli, M., Clark, M., Bradley, D., Bartley, J., Hart, K., Keenleyside, C. (2008) Rural Development Instruments Review. Report to DG Agriculture, European Commission.

Dwyer, J, Condliffe, I, Short, C and Pereira, S. (2010a) Sustaining marginal areas: the case of the English uplands. RuDI Case Study WP8 report. CCRI, Cheltenham. At www.rudieurope.net. Accessed 16 January 2012.

Dwyer, J. (2010b). UK Land use futures: policy influence and challenges up to 2060. Land Use Policy. http://dx.doi.org/10.1016/j.landusepol.2010.12.002

European Commission (2010) Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth. 3.3.2010, COM(2010) 2020 final. Brussels.

European Court of Auditors (2011) Special report no.7: Is Agri-Environment Support Well Designed and Managed? Luxembourg: European Union Publications.

European Network for Rural Development (2011) Report of a workshop on collaborative approaches to agri-environmental measure delivery. Brussels: ENRD.

Farmer, A. ed. (2012) Manual of European Environmental Policy (chapters on water, waste, biodiversity, resource use). IEEP, London. Available online at: www.europeanenvironmentalpolicy.eu

Hall, J. and Pretty, J. (2008) Then and now: Norfolk farmers' changing relationships and linkages with government agencies during transformations in land management. Journal of Farm Management. Vol. 13, pp. 393-418.

Harrison-Mayfield, L., Dwyer, J. and Brookes, G. (1998), The socio-economic effects of the Countryside Stewardship scheme *Journal of Agricultural Economics,* 49 (2), 157-170.

Healey, P. (2007) The revival of strategic spatial planning in Europe. Chapter 1, pp. 3-19 in Healey, P., Khakee, A., Motte, A. and Needham, B. eds., Making strategic spatial plans: innovation in Europe. London: UCL press.

Joint Links (2011) Crunch Time for CAP: choosing the right tools for a richer countryside. WCL, London. Also at http://www.wcl.org.uk/docs/crunch_time_for_cap_08nov11.pdf accessed 11 December 2011.

Joint Nature Conservation Committee (2012) UK Biodiversity Indicators - The Indicators: B1a. Area of land in agri-environment schemes. Data sourced from Welsh Assembly Government, Countryside Council for Wales, Scottish Government, Natural England, Department for Agriculture and Rural Development, Northern Ireland, Defra. JNCC, Peterborough, May 2012. Accessed 7 September 2012. At: http://jncc.defra.gov.uk/page-4242

Kahila, P. (2010) Mainstreaming of LEADER Approach to Agri-environmental Support in SouthWest Finland. RuDI Case study. At: www.rudi-europe,net

Kleijn, D. and Sutherland, WJ (2003), How effective are European agri-environment schemes in conserving and promoting biodiversity? Journal of Applied Ecology, 40: 947–969.

Lee, A. (2001) Better Policy Delivery and Design: a discussion paper. Performance and Innovation Unit. London: HMSO.

Lobley, M., Johnson, G., Reed, M., with Winter, M. and Little, J. (2004) Rural Stress Review. Centre for Rural Research, University of Exeter.

Lukesch, R. (2003) Assessing the equilibrium between autonomy and accountability – the evaluation of LEADER II. Paper presented at theFifth European Conference on Evaluation of the Structural Funds - Budapest, 26/27 June 2003. At:
http://ec.europa.eu/regional_policy/sources/docconf/budapeval/work/lukesch.doc
(accessed 9 January 2013)

Marsden, T. And Murdoch, J., eds. (2006) Between the local and the global: confronting complexity in the contemporary agri-food sector. Research in rural sociology, vol. 12. Oxford: Elsevier.

Maye, D., Holloway, L. and Kneafsy, M., eds. (2007) Alternative Food Geographies: representation and practice. Oxford: Elsevier.

Mills, J, Ingram, J., Reed, M, R, Short C., Gibbon, D , Dwyer, J and Butler, A. (2008) Evaluation of key factors that lead to successful agri-environmental co-operative schemes. Report for Welsh Assembly Government. Cheltenham: CCRI.

Mills, J., Courtney, P., Gaskell, P., Reed, M., and Ingram, J. (2010a) Estimating the Incidental Socio-economic Benefits of Environmental Stewardship Schemes. Final Report to Department of Environment, Food and Rural Affairs and Natural England, UK. London: Defra.

Mills, J., Lewis, N. and Dwyer, J. (2010b) Unpacking the Benefits of LEAF Membership: a qualitative study to understand the added value that LEAF brings to its farmer members. Stoneleigh: LEAF.

Morgan, K., Marsden, T. and Murdoch, J. (2006) Worlds of Food: Place, Power, and Provenance in the Food Chain (Oxford Geographical and Environmental Studies). USA: Oxford University Press.

Natural England (2009a) Vital Uplands, Natural England's vision for the upland environment in 2060. Peterborough: Natural England.

Natural England (2009b) Agri-environment schemes in England, 2009: full report. Peterborough: Natural England. (last accessed at: http://www.naturalengland.org.uk/ourwork/farming/funding/aesiereport.aspx, 30 Nov 2012)

Ostrom, E. (2010) Polycentric systems for coping with collective action and global environmental change, Global Environmental Change, 20 550-557.

Pereira, S., Dwyer, J. and (2010) RuDI WP2 report: policy design – France. At: www.rudi-europe.net Accessed 16 January 2012.

Pretty, J. (2002) Agri-cultures: reconnecting people, land and nature. London: Earthscan.

Potschin, M., Haines-Young, R. (2006). "Rio + 10", sustainability science and Landscape Ecology. Landscape and Urban Planning. 75 (3–4), 162–174.

Ray, C. (2000) Editorial. The EU LEADER programme: rural development laboratory. Sociologica Ruralis, 40 (2), 163-171.

Röling, N.G. and Wagemakers, M.A.E. (1998) Facilitating Sustainable Agriculture: participatory learning and adaptive management in times of environmental uncertainty. Cambridge: Cambridge University Press.

Swanwick, C. and Land Use Consultants (2002) Landscape Character Assessment: guidance for England and Scotland, prepared for the Countryside Agency and Scottish Natural Heritage. Edinburgh: SNH.

Siebert, R., Toogood, M. and Knierim, A. (2006) Factors affecting European farmers' participation in biodiversity policies. Sociologica ruralis, vol. 46, no.4, pp.318-340.

Sutherland, L., Mills, J., Ingram, J., Burton, R. and Blackstock, K. (2013).Considering the Source: Commercialisation and trust in agri-environmental information and advisory services in England. Journal of Environmental Management, accepted for publication in 2013.

Van der Ploeg, J. D. (1994) Born from within: practice and perspectives of endogenous rural development: Chapter 2 – Styles of Farming. Assen: Van Gorcum.

Whatmore, S., et al (2010). Understanding environmental knowledge controversies: the case of flood risk management: Full Research Report ESRC End of Award Report, RES-227-25-0018. Swindon:

ESRC. At: http://www.esrc.ac.uk/my-esrc/grants/RES-227-25-0018/outputs/Read/2fe629cd-4f07-4f90-9174-7af899052963 accessed 3 December 2012

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