

Not much environmental gain can be expected on the typical intensive arable farm, particularly since short-term rotation coppice and nitrogen fixing crops are to count towards the 5%. EFA will probably be entry-level minus.

Second, under the reforms member states have the power to transfer up to an extra 15% of support money from Pillar 1 to Pillar 2 uses. The British Government is proposing to transfer the full amount allowable. The support money transferred from Pillar 1 will fund a new scheme from 2016 to be called the New Environmental Land Management Scheme (NELMS). This will be a single tiered scheme to replace ES. The objectives of the scheme are to enhance biodiversity and water quality. NELMS will be more focussed than ES and will recognise current thinking about landscape scale conservation. The 70% target will be dropped. The thinking behind this proposal appears to be that *wildlife in the broader countryside cannot be saved and resources should be focussed on protecting those areas which are not yet part of British agriculture's ecological desert.*

### Moral hazard consequences

Perhaps this is no more than realism. At any politically feasible level of funding AES is unable to protect wildlife for a simple reason. All systems of agricultural support or subsidy, by placing a floor on financial returns, reduce the level of financial risk facing farmers, and it is this reduction of risk, rather than the level of producer prices, that results in intensification and specialisation. Mixed farming is the classic strategy for risk management in agriculture; it is also a necessary condition for maintaining farmland biodiversity. SFS raises the rate of return on investment in increasing specialisation and intensive production, the very investment that AES is trying to prevent. Thus all agri-environment schemes suffer from what we could call the Halvergate folly; creating the conditions where a certain course of action is profitable and then trying to prevent that action by paying the actors not to pursue it. The folly was partially successful at Halvergate, at least for a period of time, because the action, draining and ploughing the marshes, was easily monitored. However the moral hazard is obvious. These conditions don't hold for agricultural subsidies. Unless and until we can dispense with them and the safety net they provide, we will continue to pay the price of wildlife losses.

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# Does traditional farming still meet nature conservation needs?

*Are traditional farming and conservation aims really as compatible as we suppose, or is there now such a divergence between farming opportunity and environmental need that we require a different approach to delivering conservation objectives across the wider countryside?*

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For over 40 years, mainstream UK conservation policy has assumed that traditional farming systems provide a sound, and usually the most practical and economic, basis for managing most sites and landscapes of high nature value. We talk about the value of mixed farming in lowland landscapes to retain a matrix of cropped and grassland habitats, or about the continuation of extensive beef production in the uplands to conserve dwarf heath and mire. Our view of optimal environmental management regimes has usually been designed around a continuation of the practices that were prevalent before the agricultural revolution that took place in the second half of the last century and we have relied on 'profit foregone' payments to farmers to discourage the adoption of more modern and technologically advanced practices. Many farmers have been willing or even enthusiastic participants in this process and in doing so, the consensus has it, these traditional farming systems (a term defined below) have provided significant social and economic benefits to rural communities.

But does this accepted wisdom still hold true? Are traditional farming and environmental management really as compatible as we supposed, or is there now such a divergence between farming opportunity and environmental need that we require a different model to underpin the delivery of conservation objectives in the countryside? Have demographic and economic change so undermined some traditional farming systems as to make them impractical and unrealisable? Does our focus on the ecosystems approach and the variety of outcomes that the natural environment can provide society require a more 'designed' and outcome-related approach to the management of conservation sites and high value landscapes?

The answers to these questions are unlikely to be equivocal and this article is certainly not arguing that conservationists should turn their back on tried and tested farming methods, nor that we should disengage with the farmers who manage the large majority of rural Britain. On the contrary, a better understanding of how land management decisions combine to provide the benefits that conservationists seek should produce more resolute and collaborative engagement.

### What do we mean by traditional farming systems?

It is coherent systems of agricultural production, not just a collection of individual management practices, that conservation policy has promoted and relied upon. So for example, on low-lying wetlands such as the Somerset Levels, conservation management policy has involved the continuation of seasonally wet and low input permanent pasture grazed dairy and beef cattle and sheep. This has been pursued through the designation of Sites of Special Scientific Interest (SSSI), voluntary management agreements in Environmentally Sensitive Areas (ESA) and the purchase of nature reserves by environmental charities. In upland landscapes such as the Lake District or Snowdonia, similar policy interventions have supported the hefting<sup>1</sup> of hardy breeds of cattle and sheep on open moorland commons and the use of in-bye fields for summer hay production. Across high value landscapes in rolling lowland hills, in areas such as the Cotswolds and Lincolnshire Wolds, the continuation of mixed farming has been encouraged, including winter stubbles, spring cropping and patches of permanent grassland.

These systems represent a point in time in the evolving methods of agricultural land use and management. In most cases, they were the prevalent means of farming during the late 1940s and 1950s, after the process of mechanisation had started but before the agro-chemical revolution and agricultural policy changes of the 1960s and 70s. Typical practices of earlier periods, such as the stooking of hay or the threshing and binding of cereals, are not now considered relevant to ongoing 'traditional' systems. There are few demands for the reestablishment of the open strip field system that dominated the English Midlands until the enclosures of the 18<sup>th</sup> and 19<sup>th</sup> centuries, nor do we (generally) wish to see the return of wood pasturing systems that were common before the invention of barbed wire in the 19<sup>th</sup> century.

### Why are these systems considered important for conservation?

There are several reasons why mid-20<sup>th</sup> century farming systems have come to be relied upon for conservation management. First, the battle to stem the loss of habitats and impoverishment of landscapes that took place during the 1970s, 80s and 90s (and continues today, though with different causes), was perceived as a struggle between the benign stewardship of 'traditional' farming and the remorseless march of 'industrial' farming aided by the forces of agricultural policy, market prices and technology. Seminal moments were the production of the Porchester Report on Exmoor in 1977 (following which profit-foregone management agreements were used to discourage agricultural improvement), and the launch of the Halvergate Marshes Scheme in Norfolk in 1984, from which agri-environment schemes were developed.<sup>2</sup> Both sought to hold back the intensification of agricultural management and support the continuation of the practices which had sustained the habitats and landscapes which were at threat.

Second, the social values of traditional farming and the expertise of farmers practicing them continue to be held in high regard, perhaps reflecting a deep-seated cultural yearning for the nation's pre-industrial past. To many people, traditional farming systems have a cultural integrity that contrasts with the mistrusted and discredited methods of the modern agri-food sectors.<sup>3</sup>



Finally, traditional farming has been supported because it is simply more convenient to maintain tried and tested systems of management than to design alternatives that are not. This perhaps explains why there has not been more vocal support by nature conservationists for organic farming or permaculture as means of delivering environmental objectives.<sup>4</sup>

The primary purpose of traditional farming systems, the production of food and drink, has received relatively little attention and support by nature conservation policy. The distinctive products of extensive farming systems, such as single suckled slow-reared beef, salt marsh lamb, and craft cider, have been neglected while the management systems that produced them have been supported. Initiatives that have sought to quality assure and promote these products, as a means of giving an economic advantage to their production systems (such as Limestone Country Beef in the Yorkshire Dales and the Peak District Environmental Quality Mark) have struggled to gain a critical mass and thus remain small.

### Time for new thinking?

During the last decade, the UK farming sector has been growing in confidence and self-belief. Buoyed by rising prices for agricultural commodities, new markets in the

energy sector, more market-oriented and less environmentally distorting agricultural policy and concern about future food security, farming now has a stronger sense of direction than it has had for several decades. While higher prices of commodities like cereals, beef and milk are increasing competition for land, so high prices of farming inputs like fuel, pesticides and fertiliser are encouraging farmers to look carefully at how they maximise their margins by increasing efficiency and reducing wastage. Techniques like precision farming, which uses GPS and other new technologies to optimise agricultural inputs and outputs, and policy approaches such as sustainable intensification (borrowed from the developing world as a solution to increasing output without increasing negative impacts) are gaining momentum.

There may also be a generational change taking place in the farming and conservation communities which are consigning to recent history the antipathy of issues such as the ploughing of moorland and meadows and the grubbing up of hedgerows. Today's farmers also probably have greater personal expectations than their predecessors, being less willing to accept long hours and low financial returns and more inclined to question the validity of approaches that were accepted by their predecessors.

The effectiveness of traditional approaches to delivering environmental objectives is also being challenged by evaluations of evidence. Twenty five years after the introduction of Environmentally Sensitive Areas, and ten years after the start of the Entry Level Scheme in England,<sup>5</sup> there is a consensus that the lowest tiers of these agri-environment schemes, that seek to sustain the basic elements of the desirable farming system (such as low input permanent pasture), have usually delivered little environmental enhancement and often not maintained the status quo.<sup>6</sup> We are told that the replacement for Environmental Stewardship in England will focus on higher value more ambitious prescriptions that are targeted to specific sites and environmental objectives, a move which has already taken place in Wales and Scotland. The 'broad and shallow' approach, with its emphasis on simple prescriptions to raise best farming practice, is being discredited in favour of more targeted and challenging approaches. There is also a move away from prescription-driven to outcome-led management, involving interesting trials of this approach in areas such as Dartmoor. In the Dartmoor Farming Futures pilot, farmers are being encouraged to take more responsibility for the design and delivery of their agri-environment agreements, letting them decide how they produce the public benefits that have been agreed through an earlier spatial planning process, The Dartmoor Vision.<sup>7</sup> This change of thinking is an important one, not least because of the greater discretion it gives to the farmer to try novel practices to achieve the required outcomes, rather than specifying the means, which are frequently the continuation of traditional practices.

### The ecosystems approach and outcome-driven management

The ecosystems approach is giving us a more nuanced appreciation of the many different services that the natural environment offers to society. One implication of this approach is that there may be many different objectives for managing individual sites, with each service being derived from a different environmental

asset, each potentially requiring different types of protection or active conservation. Even when there are strong synergies between the delivery of different services, as there often are, achieving multiple objectives usually requires more complex management regimes than the pursuit of a narrower choice of objectives. Under these circumstances bespoke and outcome-led, rather than standard and input-driven, management is likely to be required.

An example of how the ecosystems approach influences decisions about land management can be illustrated by considering the objectives and likely implications for managing a lowland agricultural landscape for seven different services:

1. **Provision of food and fibre.** This is the primary economic driver of land management and focusses on the agricultural and forestry use of the most productive and accessible soils.
2. **Conservation of genetic diversity.** For this service, priority is likely to be given to the protection of the ecological network of core semi-natural habitats (such as ancient woodland, unimproved grassland and wetland), buffer zones, connecting corridors and the permeability to species of areas between them.
3. **Reduction of flood risk.** Within flood plains, priority is likely to be given to allocating suitable space for flood storage, ideally within wetland habitats. In other areas, the objective is likely to involve reducing flood run-off by increasing soil permeability and vegetation roughness.
4. **Storage of organic carbon.** The focus is likely to be on protecting and enhancing stores of soil carbon in organic and organo-mineral soils, with a secondary emphasis on plant biomass such as timber and root matter.
5. **Provision of public recreation.** Here the emphasis is likely to be on maintaining and publicising linear routes to and from suitable access points, with surfaces capable of supporting the types of uses involved.
6. **Conservation of landscape character.** This should involve identification, protection and enhancement of the key and distinctive characteristics of the local landscape.
7. **Support of cultural identity and social capital.** This service is less easy to connect to specific forms of land management and is vested in the skills and experience of people.

### The need for coherent systems of management

Achieving these objectives in practice involves a process of identifying the environmental assets, such as habitats, soil types, or landscape features, required for each service and the threats to, and management needs of, these assets. Some kind of spatial prioritising between services may also be required, for instance where there are conflicting management requirements. This process may not result

in a coherent or viable system of management and the problem with focussing on the desired outcomes is that it doesn't specify what the requirements for management inputs are and how these relate to each other. Assuming agricultural management is required (which will normally be the case in agricultural landscapes), decisions are therefore needed on what types of cropping and/or animal husbandry will lead to the desired outcomes. These decisions will need to take account of the willingness, resources and skills of the landowners and farmers involved. It will be essential to consider the economic costs and benefits involved. This process is a good deal more complicated than the one which starts with the assumption that a continuation of previous management regimes will deliver the goods.

A few additional comments about the economic and cultural benefits of farming are relevant here. Not only do these influence land-use planning policies, which set an important wider context for conservation management, but both are dependent on coherent systems of management rather than a menu of individual actions. The primary purpose of farming is the production of food and drink (and other marketable outputs such as fibre and energy) and these, of course, have national strategic importance. Decades of declining self-sufficiency in the food we consume have left the UK dependent on less reliable and less wholesome imports and exposed to high inflation in world food and energy prices. The economic value that is generated from activities both 'upstream' (such as through input suppliers and agricultural colleges) and 'downstream' (such as through livestock hauliers, food processors and retailers) of farming are also relevant to integrated land-use planning.

In a similar way, the contribution that farming makes to cultural identity also relies on our understanding of the 'way of life' it represents rather than simply a selection of distinct practices. It must be acknowledged that traditional systems, such as crofting in Scotland or commoning in England and Wales, have their own intrinsic value which have been recognised and supported in environmental management regimes such as the upland ESAs. 'Family farming' (where farms are run and handed down by generations of owner-occupiers or tenants) might be said to occupy a similar position in contributing to the social fabric of many small villages and hamlets (although there might be disagreement over whether this is a social good deserving support in its own right). A focus on coherent systems of management is therefore necessary to ensure economic sustainability and traditional systems may deliver valued cultural benefits.

### Designing purposeful management

Farmers have often criticised conservationists for looking backwards to the past and not forward to the future. We need to be aware that the success that land management regimes have previously had in resisting unwanted change and maintaining environmental and social values is no guarantee to the future. And we should be wary of assuming that prescribing a particular set of management inputs will automatically provide the outcomes we want. Furthermore, the social and economic infrastructure that supports land management is changing so that regimes that were considered viable and effective in the past may not be in the future.

Radical alternatives to the continuation of traditional farming systems are being considered. Policies of coastal realignment along parts of the North Sea and in areas of the Bristol channel are enabling the sea to reclaim farmland. In other low-lying areas, frequent flooding from rivers and groundwater may make even wet grassland farming unviable, prompting the creation of reedmarsh flood storage areas. Ambitious rewilding projects, such as on the Knepp Castle Estate in the Weald, are pushing the ecological timeline back by thousands of years to create a matrix of wood pasture and wild grazing. Around towns and cities such as Todmorden and Brighton, community supported agriculture initiatives are experimenting with permaculture and other relatively intensive forms of food production. New plant diseases are leading to radical changes in forestry management, and similar issues may yet be faced by farmers.

Despite these new approaches and pressures, it would be foolish to argue that tried and tested forms of agricultural management led by experienced farmers will not have the primary role in delivering the many goods and services that society values from the countryside. However, the way in which this is achieved will need to evolve, requiring greater attention to the specific objectives and outcomes deemed most important in each area. Past practices will be no guarantee of future success, and more innovative and bespoke approaches will need to be tried. A more purposeful approach which better understands which components of agricultural land use and management will give the best environmental outcomes, should help us meet society's expectations and also forge more productive relationships with farmers.

### References and notes

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