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Changes in Upland Agriculture and its effects on the Environment: a case study from Cumbria, UK
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Abstract

The character of upland agriculture in England is in dramatic transition. The most recent impetus to this change is the articulation of the EU Regulation 1259/99 on support of rural development from EAGGF (European Agricultural Guidance and Guarantee Fund) through England's Rural Development Programme. The aim of the ERDP is 'to sustain and enhance the distinctive environment, economy and social fabric of the English Countryside for the benefit of all'. This paper investigates the initial effectiveness of changes made by the ERDP to the environment and social fabric of the uplands of Cumbria, through various interview strategies with the farming community.

The paper is divided into three main parts. First there will be a description of the character of upland agriculture in Cumbria, with particular reference to the management of sheep on open uplands (fells) and the social role of this activity. Second, it will briefly investigate the nature of the physical manifestation of the ERDP in terms of the schemes through stock reduction and environmental impact. The paper will then concentrate on the relationship between environmental and social changes that have occurred on the upland farming landscape.

Whilst there have been definite improvements in the semi-natural habitats of the uplands and in the quality of livestock, there have been some negative issues. The farming community have had problems with their management of the open fell areas, the spread of undesirable vegetation and related preferential grazing issues. The pivotal issue seems to revolve around the management of stocking on the fells and their related impact on social and environmental change. How stocking densities are managed could lead to success or failure of the ERDP's aims in upland areas.

1 Introduction

Upland and mountain areas operate on the fringes of viable agricultural production. These environments through their physical constraints of soil, climate and topography limit farmers to livestock production and profit margins of around £5000 per annum, well below the national United Kingdom (UK) average (Chadwick, 2003). The uplands of Cumbria in northern England are no exception to this. A system of farming has developed here to make the best use of the environment by adapting farming practices to fit the harsh winters and wetter summers (2000mm pa. and a growing season of temperatures above 5.6°C of less than 190 days; Grigg, 1995). The landscape produced by this farming system has become highly prized in terms of ecological communities and recreational activities (Cumbria County Council, 1997). Indeed, it forms the core feature of the Lake District National Park and the Park Authority's bid to secure World Heritage status (Chitty, 2002).

The character of this upland landscape, however, is one of transition. The most recent impetus to this change is the articulation of the EU regulation 1259/99 on support of rural development from EAGFF through the England Rural Development Programme (ERDP) (MAFF, 2000a). The aim of the ERDP is ‘to sustain and enhance the distinctive environment, economy and social fabric of the English countryside for the benefit of all.’ The philosophy behind it as a programme is that economic activity will produce an environment desired, whilst at the same time providing a stable social structure in rural areas. The issue is whether these three strands of economic, environment and social are mutually exclusive or symbiotically beneficial. If they are the latter, then the ERDP should succeed, if they are the former then there may need to be a re-think of how the schemes under the ERDP are designed to avoid conflict of interest and thus undermine the other strands.

This paper investigates the relationship between the social and environmental strands of the ERDP by examining a case study based on the farming communities of the uplands of Cumbria. The paper is divided into three parts, drawing on results from part of a study to investigate the social capital of hill farming (Burton *et al.*, 2004). First, there will be a description of the character of upland agriculture in Cumbria, with particular reference to the management of sheep on the open uplands (fells) and the social structures related to this activity. Second, it will briefly investigate the nature of the physical manifestation of the ERDP in terms of schemes to address the most pressing perceived environmental issue, that of overgrazing. The paper will then concentrate on the changes that have occurred and are beginning to occur in terms of the social and the related environmental change, and discuss some of the broader ramifications.

2 The Character of Upland Agriculture in Cumbria

2.1 The upland Farming system

The upland farming system of the Cumbrian uplands is a product of many thousands of years culminating in the upland farming landscape shown in Figure 1. The upland

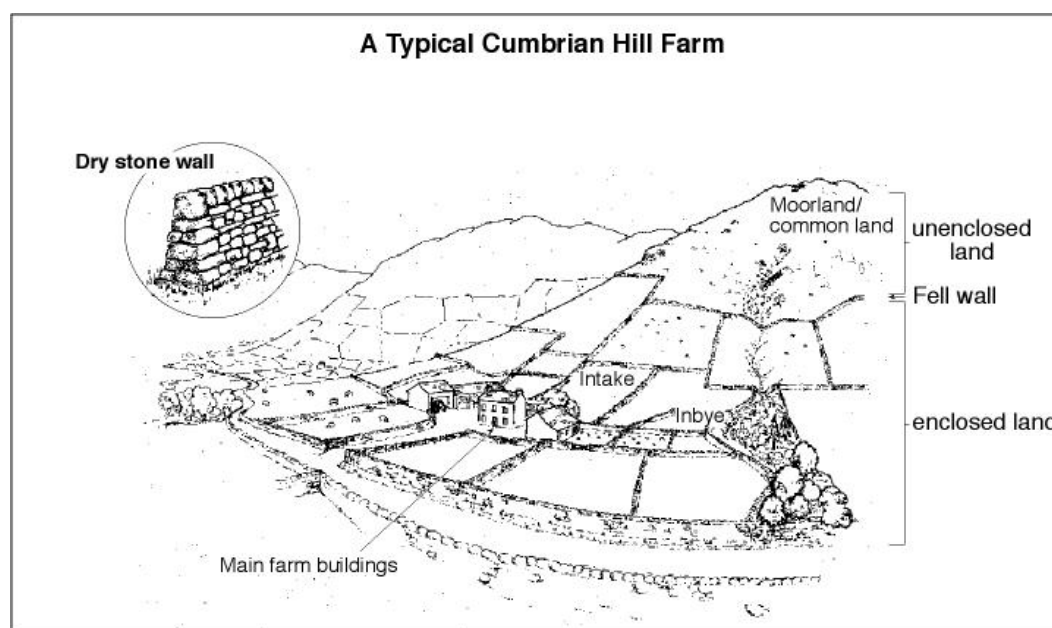


Figure 1 – A Typical Cumbria Upland Farm

farm landscape of Cumbria comprises three distinct land types: inbye, intake and fell land. *Inbye* land is by far the best land, close to the farm buildings and used for the production of hay or silage for the winter, grazing land in winter months and lambing areas in spring. At the other extreme are the *fells* at the highest altitudes (usually 300m ASL or more). These are areas typically of heather moorland or rough unimproved grass pasture highly prized in terms of nature conservation in the UK and Europe (English Nature, 2001; Thompson *et al*, 1995) Indeed, it is the management of the land in the past that has allowed these ecological communities to develop through extensive grazing regimes and periodic burning of the heather (*Calluna vulgaris*) to re-invigorate growth (Backshall *et al.*, 2001). In between the fells and the inbye lies the *intake*. This is land that has been literally taken in from the fell and enclosed, usually with a drystone wall made of locally field cleared stone¹. The last wall before the open fell is known as the '*fell wall*'. The system of walls, enclosed fields and fell areas are then what give the uplands of Cumbria their intrinsic high quality landscape so desired by the public (Cumbria County Council, 1997; Ratcliffe, 2002).

Farmers run mainly two enterprises in the core of the Cumbrian uplands- sheep and/or beef; on the valley bottoms and upland margins some environments are sheltered enough to run a dairy herd. Occasionally farms even run a dairy herd and a fell sheep flock. Upland farms, themselves, are divided into two types; upland farms containing inbye, intake and fell and the hill farm, which contain intake and fell with little or no inbye. This tends to restrict hill farms to traditionally running just sheep, where as the true upland farms have historically run sheep flocks and cattle herds.

From the farmers point of view the farm landscape they have developed has a number of functions. First, walls keep livestock from straying. It keeps rams away from ewes at the wrong time of year. It allows stock to be grazed in winter on a rotational basis from one field to the next to ensure sustainable grassland management. The fell areas are summer pasturage, when the enclosed land's productivity has been exhausted or allocated for the production of grass and hay crops for winter feed. In order to support the same number of sheep on the fell as in the inbye, the lower productive land needs a substantially larger area over which the sheep disperse. This grazing area has developed over many generations of farmers, who originally shepherded the sheep keeping them to land that the farm had common rights² over. Over time the sheep get to know the land that they can graze on and gradually the intensive shepherding can be withdrawn so that the flock manage themselves geographically. This instinct of the sheep to keep to a certain land area is known as '*hefting*' or '*heafing*'. The ewes pass the knowledge of the area (heft) on to their lambs, who in turn pass it on in turn to their lambs. In this way it is important that the farmer maintains a multi-generational flock. The other point of hefting is that a common can be many thousands of hectares of land and thus can contain a number of hefts. Over

¹ The walls are not mortared together but are constructed as two separate walls, tied together with stones crossing from side to side and the gap in-filled in between with smaller pieces. Walls last for about 120 years, but the actual line of many walls have existed for hundreds if not thousands of years and are simply re-built when they collapse.

² Common rights – the right to carry out a certain activity on land that does not actually belong to the farmer. In Cumbria typically this is *pasturage* – the right to graze sheep. Farms have common rights allocated in one of two ways; either as a stint (a number of sheep) or as a number of sheep per area of land.

time the *virtual* boundaries between hefts have developed keeping stock from straying into another heft, thus developing a self policing of grazing pressure.

Another important feature of the upland farm system is the '*gather*'. Sheep are collected and gathered together from the open fell at various times of year and brought down to the farm for shearing, worming, winter grazing, sales and lambing. (Few farmers lamb their sheep out on the fell now for management reasons). Because hefts are geographically extensive over difficult terrain the labour requirements for gathering are high (as many as 25 people). This is exacerbated by precipitous landscapes that do not lend themselves to modern All-Terrain Vehicles, thus pedestrian access is often the only means reaching the spread out stock;

'These fells have been shepherded. They're shepherded the way now as they were 200 years ago with a dog and a stick. You know, there's no flying around on motorbikes or whatever on the high fells so they've got to be managed as they were years ago.' (Farmer 5, Burton *et al.*, 2005)

Traditionally, farmers, their families, staff and sheep dogs work together over an entire common (several hefts) to gather several flocks in one day. In this way a large number of people work co-operatively to clear all sheep from the common in an efficient manner (Burton *et al.*, 2005). Upland commons in Cumbria can be extensive, 66,332 hectares are accounted for by 34 separate commons alone, averaging at 1950 ha each (Aitchison *et al.*, 2000) and thus co-operation between people is essential if all sheep are to be brought down safely. The sheep are then divided into the distinctly owned flocks down at the fell wall either there and then, or through the '*Shepherds Meet*', such as that at Ravenstonedale, a separate event when mis-gathered sheep are exchanged between farmers. Any losses in farm labour cannot be replaced by short term contractors, as gathering requires people with an intimate local knowledge of each unique fell, the behaviour of the sheep and their own sheepdogs, plus a familiarity with the land themselves. Furthermore, experience accrued over years also enables the farmer to recognise where sheep will be in times of adverse weather conditions. Historically, non-farming people from the village would assist with the gather, but this local vertical integration is lessening as the population of villages dwindles or is replaced by non-local people with a more suburban outlook and lower or no livestock skills (Countryside Agency, 2001).

2.2 The Study Area

The hill farming area of Cumbria can be divided into 3 distinct upland massifs, the Pennines, the Orton-Howgills complex and the Lake District (Figure 2). Each of these areas varies in character from the next which has influenced the evolution of the hill farming system on the massif and currently controls farm management systems. Such diversity makes homogenous hill farming policy detrimental to the continuity of this farming system (as will be seen below). The Pennine massif runs along the eastern side of the county of Cumbria, forming part of a much longer chain running over 400 km along the north-south axis of central England into Scotland. Within Cumbria, the geology varies greatly and thus the Pennine landscapes traversed, differ substantially from south to north (English Nature, 1995). The fundamental geological variation represented by the Upper and Lower Carboniferous provides softer limestone terrain in the south and middle part of the county running northwards into a more wild Millstone Grit open expanse of the North Pennines Area of Outstanding Natural Beauty (AONB).

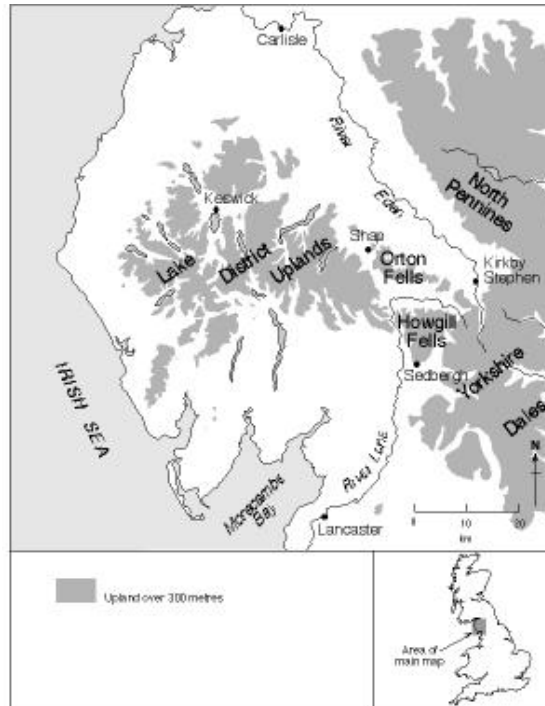


Figure 2 – The upland massifs in the Study Area

This great variation in landscape has made it difficult to make generalisations about the hill farming in this massif as farming systems have adapted to the variable environments. In the southern part of the area the farms have small quantities of inbye leading straight out onto steep open fells. Moving northwards, the farms spread out onto wider valley bottoms. These farms have larger inbye areas with more options to grow fodder crops, which also support extensive areas of enclosed fell in contrast to open hefted fells in the Howgills and Lake District areas.

The second upland area in Cumbria can be referred to as the Orton – Howgill Fell Complex made up of two distinct sub-massifs dissected from each other by the Upper Lune valley (Figure 4). The Orton and Howgill sub-massifs are distinctive landscapes in their own right (Countryside Commission, 1998). The Orton sub-massif is a significant block of limestone upland comprising limestone scars and pavements. The fells here are divided into three distinct environments: a fringe of rolling farmland, a central core of higher limestone farmland and areas of open moorland and common (English Nature, 1995). The area has a long history of human habitation with evidence of Bronze Age settlement. The open fell areas are considered important in terms of their vegetation because they support some of the last extensive tracts of ‘lowland’ heath in the county. In contrast, the Howgill Fells are formed from a combination of Silurian siltstones and sandstones, which have been heavily glaciated. The effect has been to produce a landscape of steep slopes and rapid altitudinal variation over extremely short distances. Most farms have small amounts of inbye and access to large expanses of open fell. In the past the Howgills have been overgrazed, but current management regimes have led to no over-wintering on the fells by any farmers. This area is disadvantaged economically to the other areas in the study as it is not part of the main tourist route and consequently many forms of diversification are not viable.

The third area forming this study lies in the central area of Cumbria constituting some of the highest uplands in England. The Lake District is extremely geologically diverse reflected in the vernacular architecture of each valley or 'dale'. This dale landscape is made up of a 'spoke and wheel' arrangement derived from a radial drainage pattern centred on the Scafell range which was then glaciated around 14000 bp. The effect is a series of dales each with its own cultural character developed through continuous farming practices dating from around 5000 years ago (Ratcliffe, 2002). The dales are narrow with some inbye land which runs up through intake to open unenclosed fells.

2.3 Survey methodology

The farm survey conducted across the three upland massifs of Cumbria used a variety of techniques to gather information. First, eight in-depth farm family interviews were conducted in November and repeated again in January following the completion of farm diaries by members of the family. Second, four focus groups each of 10 participants were carried out, two of which contained farmers only and two of people from related land-based organisations and individuals who were not farmers. Finally 36 semi-structured farm interviews were completed in equal numbers across the three areas. The original figure of the latter was hoped to be higher, but unprecedented gales and flooding at the end of January in Cumbria curtailed fieldwork. The three approaches were cross referenced horizontally and vertically with family members participating in focus groups and semi-structured interviews in order to ensure parity of answers. In total 44 individual farm businesses donated to the survey.

3 Initiatives Influencing the Upland Farming Landscape in Cumbria

A range of initiatives operate in the upland arena, which over the years have had a profound effect on the management of upland farms. The most notable are: the Less Favoured Areas Directive, the Rural Development Regulation and a number national environmental schemes.

3.1 The EU Less Favoured Areas Directive

This diverse landscape is recognised for its value through a range of EU and National designations. All of the uplands in Cumbria are designated under the Less Favoured Areas Directive totalling over 70,000 hectares (NORDREGIO, 2004) and thus all farmers in the sample draw subsidy in the form of the Hill Farm Allowance (HFA). The greatest physical manifestation of the HFA on the upland landscape in Cumbria has been the reduction of stock rates of sheep on the fells. Under the old Hill Livestock Compensatory Allowance (HLCA) and Sheep/ Beef Annual Premiums (SAP/BAP) farmers were paid subsidy based on the number of Livestock Units they held³. As Winter *et al.* (1998) note the economics of this regime encouraged many farmers to focus on sheep production at the expense of beef, which in turn has led to undesirable environmental impacts (Sansom, 1999). In 2000 the scheme changed from headage to hectareage payment (the HFA) and was tied into the ERDP. The incentive to have large herds and flocks was removed in an attempt to control overproduction and reduce overgrazing problems (Evans, 2003).

³ Livestock units – in the UK, 1 Livestock Unit (LU) is equivalent to 1 dairy cow. In this context LUs for sheep range from 0.11 for a heavy ewe to 0.04 for a lamb. A typical value is 0.08, thus 1 dairy cow is equal to 12.5 ewes.

Within the survey all farmers had received HLCA, SAP, BAP and HFA. The physical manifestation of the switch from one regime to the other had been a reduction of stock on all farms. The reduction, however, was variable. Some farms had reduced flock sizes (65%), others had sold off their flocks altogether (15%), the remaining farmers had re-structured their enterprises to move sheep from one part of the farm to other to meet the stocking density requirements on the fells; a type of halo effect (Russell, 1994). The explanation of the total pattern is however, unclear, as all the farmers in the survey had been affected through the Foot and Mouth crisis in 2001 (Franks *et al.*, 2003), which encouraged some farmers to de-stock altogether, others to stop stocking their fells and concentrate on their inbye or intake, and yet others to restock to pre-2001 rates. The pattern is then blurred through the adoption of EU and UK agri-environment initiatives, which have also reduced stocking rates as noted below.

3.2 The Effects of Modulation

At the time of the field survey, all the farmers involved in the project expected to apply of the Single Farm Payment (SFP⁴), the UK Government's mechanism to achieve modulation from Pillar I to Pillar II. The articulation of the SFP amongst the farm businesses surveyed will have a high level of impact on farm incomes due to the extensive SDA⁵ and common land on the farms. What this economic impact will be was unknown at the time of survey because the levels of subsidy and regulations had not been firmed up. Some farmers believed they would be better off, others worse; the majority had no idea. However, many of the views about the SFP were cautious due to lack of information, from anywhere, about the operational nature of the scheme and the payment rates. One farmer said:

‘Information has trickled out in a very unsatisfactory way – there has been no scope to sort out any long term planning. The arrangements for common land could have serious negative effects on many farms’ viability.’
(Farmer 9, Pennines)

This is particularly going to be an issue for the Pennine farmers interviewed because large areas they farm fall above the moorland line (nearly 25%), where Single Farm Payments are at their lowest.

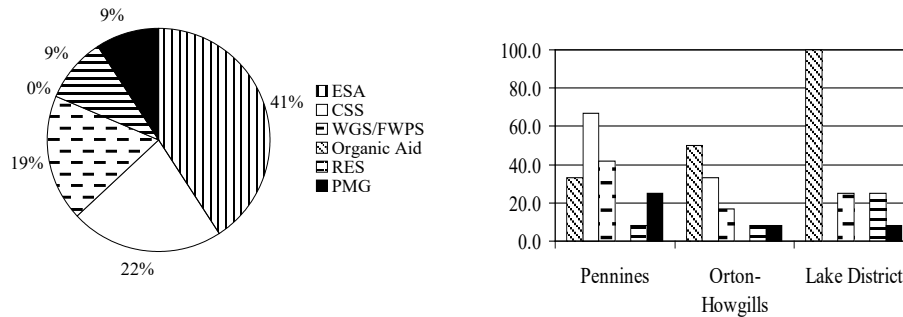
3.3 The England Rural Development Programme (2000-2006)

A range of initiatives have been drawn together under the ERDP by DEFRA (Department of Environment, Farming and Rural Affairs), which have run in various manifestations prior to 2000 (MAFF, 2000a). The two most influential in terms of environmental enhancement are the Environmentally Sensitive Areas initiative designated originally under EU Regulation 797/95 and the Countryside Stewardship Scheme, a UK-based project (ADAS, 1997; Morris & Young, 1997; Slater, 2003,). Two ESAs operate within the survey area at present, the entire Lake District ESA (245,000 ha), which covers almost the same geographical area of the National Park (229,200ha), and some of the northern and western most extremities of the Pennine

⁴ Single Farm Payment – the method of subsidy payments being adopted by the UK Government as a result of modulation. Payments a based on the hectare.

⁵ Severely Disadvantaged Areas refer to the land designated under the Less Favoured Areas Directive in the UK. It is broadly the same as the uplands (land approximately over 300m). This land commands a lower SFP than non-LFA lowland agricultural land. The SDA land is divided into common land and land above the moorland line. The latter is a map based boundary above which land is predominately moorland (rough grazing and *Calluna* heath); this land has the lowest subsidy payment of around £30/hectare.

Dales ESA (11,169 ha or 24%) (Cumbria County Council, 1997; pers. comm. C. Harris, 2005). Within the survey sample 41% of all farmers have ESA agreements and 22% of farmers CSS. A 100% of surveyed farmers from the Lake District hold ESA agreements, whereas 67% of Pennines and 33% Orton-Howgill farmers hold CSS grants (Figure 3a & 3b). There are no CSS agreements held by the Lake District Farmers in the survey, due to the complex EU double funding rules and probably more demanding maintenance requirements.



Figures 3a & 3b –ERDP Selected Grant Adoption

ESA –Environmentally Sensitive Area; CSS – Countryside Stewardship Scheme; WGS/FWPS – Woodland Grant Scheme/ Farm Woodland Premium Scheme; Organic Aid Scheme; RES- Rural Enterprise Scheme; PMG – Processing & Marketing Grant

A range of other grant schemes under the ERDP have also been adopted by the farmers in the survey, notably the RES and PMG that have allowed them to diversify their businesses way from traditional farming enterprises. Bed & breakfast enterprises had particularly benefited from these grants as had adding value to local products for direct marketing purposes (33% of farm businesses surveyed).

3.4 Other Environmental Designations

Around one third of the county is occupied by the Lake District National Park (from which the Lake District farmer sample was drawn) and the far south east corner forms the northern edges of the Yorkshire Dales National Park (forming part of the Howgills- Orton sample). Three AONBS exist, one of which is the upland North Pennines AONB running along the eastern edge of the county and includes some farms from Pennine sample (the rest of the sample were drawn from land just outside the designation). The county also supports an extensive network of other nature conservation designations, such as National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs), which account for 27.3% of the land area (Cumbria County Council, 1997). Few farms are therefore untouched by some type of environmental designation.

A notable scheme in the Cumbrian uplands is the Sheep Wildlife Enhancement Scheme (SWES). This is an initiative administered by English Nature (then the Government’s nature conservation statutory body) and funded out of the National Sheep Envelope, which is discretionary funding from the EU Sheepmeat Regulations. The scheme is open to farmers who graze sheep on land designated as SSSIs. The principle is that of sustainable grazing to eliminate situations of over- or under-grazing, by funding stock changes and supporting shepherding (Johnston *et al.*, 2005). The stocking reduction element was causing concern amongst the farmers surveyed as they perceived that a number of hefts were being de-stocked in their entirety.

However, English Nature records show that this has only happened on a single common, with the agreement of all other commoners (pers. comm. J Johnston, 2004).

3.5 Summative Environmental and Social Effects of these initiatives

The cumulative effects of these initiatives can be divided into two main issues, first, the reduction of sheep numbers on the open fells, and second the reduction of labour.

3.5.1 Sheep Reduction

The combined effect of the HFA, modulation, the ERDP and the SWES has enabled the reduction of stocking densities on the open fells and adjacent habitats. The possible effects of these losses are comprehensively summarised by the IEEP (2004) report. However there are particular points of note for the Cumbrian survey, which will be discussed here.

These initiatives have been beneficial to both the farming and nature conservation communities in the Cumbrian survey. For the farmers the reduction of stock has led to better quality livestock as competition for good quality grazing has reduced. Several farmers in the survey (35%) commented on this and the fact that the reduction of stock had also led to improvements in the agricultural potential of the grazing. Although this is subjective in research terms, the improvement of diversity in the grass sward for agricultural purposes with controlled stocking rates is an established fact (Backshall *et al.*, 2001; Frame, 1992). However, the main reason for the reduction of sheep on the upland fells has been for nature conservation purposes. In the past overgrazing has led to dwarf shrub habitat being replaced by less desirable (and unpalatable) grasses such as *Nardus*, *Molinia* or *Agrostis-Festuca* communities depending on soil conditions (Welch, 1986; Miles, 1988). Research indicates that reduction of stocking densities will allow the recovery of more desirable habitats (eg. Carey *et al.*, 2002; Hulme *et al.*, 2002; Slater, 2003; SQW Ltd. 2003). Subjective evidence from farmers in this social survey also shows the recovery of a desired grass sward and *Calluna* communities.

Unfortunately the benefit of stock reduction is not so clear cut for the environment as this suggests. A range of observations by farmers over the spread of undesirable vegetation types is cause of concern. Around 90% of farmers noted the expansion of Bracken (*Pteridium aquilinum*) on their open fell land and believed that it was due to de-stocking. This is a complex change as it has been occurring for over twenty years, but recently seems to have accelerated. The pattern of expansion can be explained through two changes in farm management. First, the loss of cattle through unfavourable subsidy support for many upland farm businesses. Being larger beasts the cattle are able to trample and bruise the *Pteridium* enough to suppress its spread, as is general high grazing pressure (Pakenham *et al.*, 1997). Second, traditionally bracken was cut by farm labourers and used for animal bedding, roofing materials and to produce potash for soap. With the decline of labour and the identification of it as carcinogenic the cutting has all but ceased. The corollary of the decline of cattle, lack of bracken cutting and the recent de-stocking has encouraged the spread of this plant.

A second undesirable vegetation is the spread of *Nardus* and *Molinia* grasses, noted by about 80% of farmers in the survey. Once stocking densities are reduced, the sheep that remain simply find other more palatable areas to graze. This is because competition for more palatable species has rapidly declined, thus the *Nardus* and

Molinia growth is no longer suppressed. Milligan *et al.* (2004) have noted this in the Yorkshire Dales ESA, just to the south of Cumbria. Both these grasses have low nutritional value for sheep (Frame, 1992) and little conservation value as well (Milligan *et al.*, 2004).

The thinning of sheep over the heft and the reduction of competition intra-heft has also had a profound impact on the neighbouring hefts. Previously, at relatively high stocking densities, sheep were kept to their own heft. Unfortunately, as stocking densities have dropped, sheep have begun to drift off-heft on to neighbouring land. Farmers in the survey commented that in the past there would always be one or two sheep that did this and after gathering they would simply drive round into the next dale and collect the 2 or 3 straying sheep from the farmer who had gathered them. The reduction of stocking densities has had a profound effect on the numbers of sheep drifting into other hefts. Farmer 10 in the Lake District reported that his number of strays had gone from 4 or 5 sheep to 60 in the space of 5 years. He blamed it on the reduction of stocking due to a combination of agri-environment initiatives and a few farmers abandoning their hefts after FMD. The problem is exacerbated by the 'spoke-and-wheel' landscape and geographical infrastructure of the Lake District massif. The road network concentrates into the valley bottoms; thus farmers are forced to drive down one valley, out the uplands and then back in again into the next valley to collect sheep from the farmer into whose heft they have strayed. For Farmer 10 this meant two trips of 60 miles (90km) with a lorry instead of car and trailer, which had increased fuel costs for him dramatically, especially as gathering occurs a number of times a year. For other farmers the loss of Shepherd's meets in their local area had added to this drift problem as now they had to visit each and every farm with one or two of their sheep instead of a central pick up as Farmer 12 in the Pennines group noted. He himself had to travel 120 miles (180km) to reclaim his drifted sheep.

3.5.2 *Reduction of labour*

The other main effect of changes in the management of upland farming has been the reduction of labour. This is complicated as the reduction is both a symptom and a cause of the re-structuring of the industry. Labour shortage has occurred due to a number of economic and social factors discouraging the younger generation to continue upland farming and the cost-price squeeze. To a certain extent it can be argued that the development of ATVs has slowed the impact of loss of labour on some upland farms, by enabling farmers and shepherds to traverse more terrain than they would have on foot. Many shepherds have also taught their dogs to sit on the back of quad bikes to allow them to take the dogs up for the gather! Thus the loss of staff has been less acute than on other farms where terrain is simply too precipitous for ATVs. In this respect Lake District and some Howgill farmers rely less on ATVs than to the Pennines group.

In some instances, this reduction of labour in the survey area was noted as a benefit by interviewees (about 25%) in certain circumstances. From an inter-heft point of view, it had helped to eliminate graziers who could be difficult or dissenting in how and when gathers should take place. Farmers commented also on poor animal husbandry and were pleased when certain people removed their hefted flock. This was of particular benefit in helping to reduce sheep scab, a disease which requires sheep to be dipped in a chemical bath once a year. Some common graziers simply did not dip

their sheep, thus encouraging the spread of the disease. Their decision to abandon their heft was welcomed by those remaining.

On the negative side, problems with gathering have increased as the stock is spread more thinly and with a lower labour force. As the number of staff has fallen as farms have amalgamated, farmers retired or taken stock off entirely, the number of people to gather has collapsed. An example from the survey included Farm 2 from the Pennines, where a drop of 22 people to 9 over the last ten years for the gather had occurred. It is simply getting to the point where there are not enough people physically to control the sheep flocks as they come off the fell down to the fell wall. Another farmer was noted to say:

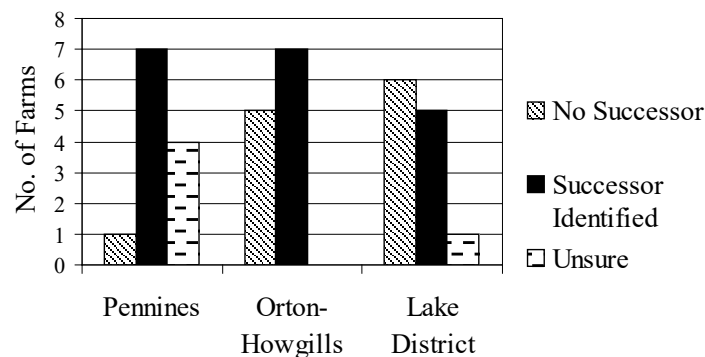
‘Trouble is, there was a lot more little farms 40 years ago all had sheep on the fells and obviously there was more people to gather the fells. Whereas now its getting more like a skeleton crew as farms have been amalgamated but we’ve still got the same number acreage of hill to gather’

(Farmer 5, Lake District).

The lack of people too, to gather has led to less social cohesion. After the gather, people used to meet up to have a meal or a drink, before going their separate ways. These social events are getting less and less each year (Farmer 2, Pennines).

The scale of this loss of farms and staff cannot be underestimated. Succession is one of the more concerning issues for the upland farming community. Many farmers’ children have been dissuaded from entering the industry through observation of their parents working life, poor working conditions and a low wage economy. Of the surveyed farmers only 53% had a secure successor, of the rest a third had no heir and 14% were unsure. There were, however, significant variations between the three upland massifs as shown in Figure 4, whereby the Pennines sample has a substantially greater number of heirs than the other two massifs. The worst situation was in the Lake District sample where half of the interviewed had no successor identified. This is particularly troubling given the view of the National Park that upland farming is the backbone of the landscape production.

Figure 4 - Farm Succession in The Cumbrian Uplands



Further evidence of this dire situation has been provided by a local social historian for one Howgill fell, where she has compared the change over the last 20 years. Her research shows that there has been a reduction of 45% in the number of farm businesses and of the remaining 55%, only 14% had heirs to continue farming (pers.

comm. H Wilson). It means that there are now only 5 operational farms out of the original 36 that have a secure future in terms of inheritance. This does, not of course, take account of economic stability of their remaining units.

With such a reduction of farm families, agricultural depopulation is inevitable (Countryside Agency, 2000). In some instances, such as in the Howgills, farms have been sold off as non-farming residences (7 farms), which does keep the population from collapsing completely, but it hides the restructuring of the population away from agriculture and all its attendant social changes (Halfacree & Boyle, 1998). As the Countryside Agency⁶ (2001) note for North West England (of which Cumbria is part);
‘Some rural communities can suffer from a lack of social capital – defined as the networks, norms and trust that bind societies and enable groups to pursue shared objectives. This is due to a number of factors including..... an unbalanced rural population in terms of age and social background that can lead to a loss of community spirit and an increase in isolation for some groups.’ p22

Whilst this is no new phenomenon in rural Britain (Newby, 1985), it has wider implications for hill and upland farming, as there are less skilled people to draw on for the gathers required and the other labour intensive tasks of managing farms in these environments (such as wall repairs).

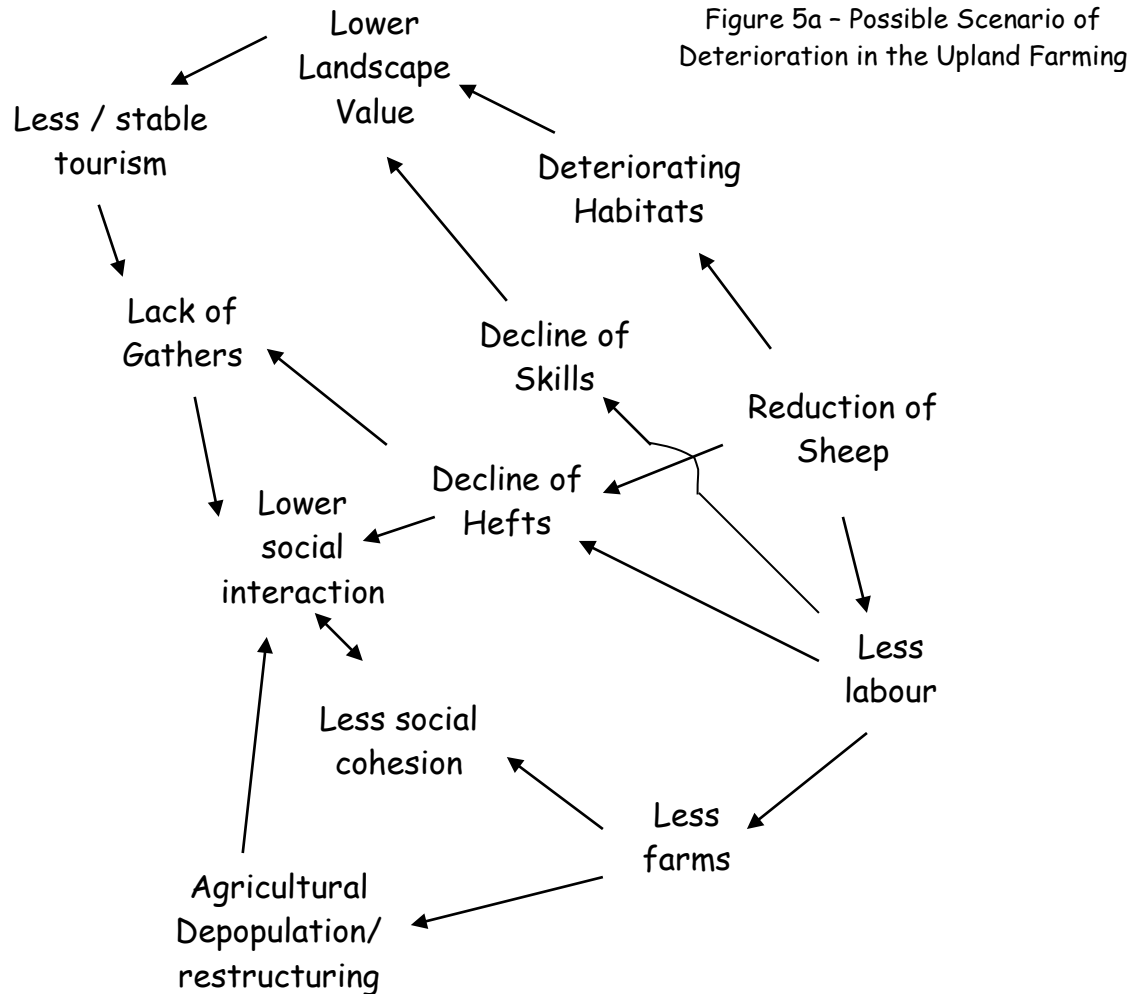
An attempt has been made to address the decline in skilled labour and successional issues through a Cumbrian initiative known as the *Fell Farming Traineeship Scheme*. This pilot project, designed and overseen by Cumbria Fells & Dales LEADER+ aimed to find ways of allowing young people to stay in, return to or take up upland farming (Mansfield & Martin, 2004). Whilst a small number of keen apprentices were found, the farmers involved in the scheme could not employ them full time due to their own economic marginality. However, all the farmers recognised the value of having a second pair of hands to help them with farm tasks and 72% also recognised the social value of having someone else to talk to about farming issues (Mansfield *et al.*, in preparation). This is particularly a valuable social role, given the increasingly isolationist nature of upland agriculture through economic necessity rather than choice.

4 The Interplay between Environmental and Social Change

The ERDP aims are designed to allow the supportive interplay of social, environmental and economic needs in rural areas. The uplands of Cumbria in this context should be no different. However, what the ERDP fails to take account of is the unique character of the upland farming sector and its reliance on gathering and appropriate stocking densities. This issue is one of cyclical *deterioration* (Figure 5a). With the decline of flock sizes, incomes on farms reduce. If incomes reduce farmers are forced to reduce the labour force. As the labour force reduces two things happen, first the process of gathering becomes harder and second the agricultural depopulation results from the downturn in farm work. In response, the farmer reduces the flock

⁶ ‘The Countryside Agency is responsible for: conserving and enhancing England’s countryside; spreading social and economic opportunity for the people who live there and helping everyone, wherever they live and whatever their background, to enjoy the countryside and share in this priceless national asset’ (Countryside Agency, 2001). This is achieved through influencing decision makers by providing expertise, research and good practice and by implementing specific work programmes.

size again or may even take the stock off the fell altogether. The results of this are three fold – agricultural depopulation, environmental degradation and loss of



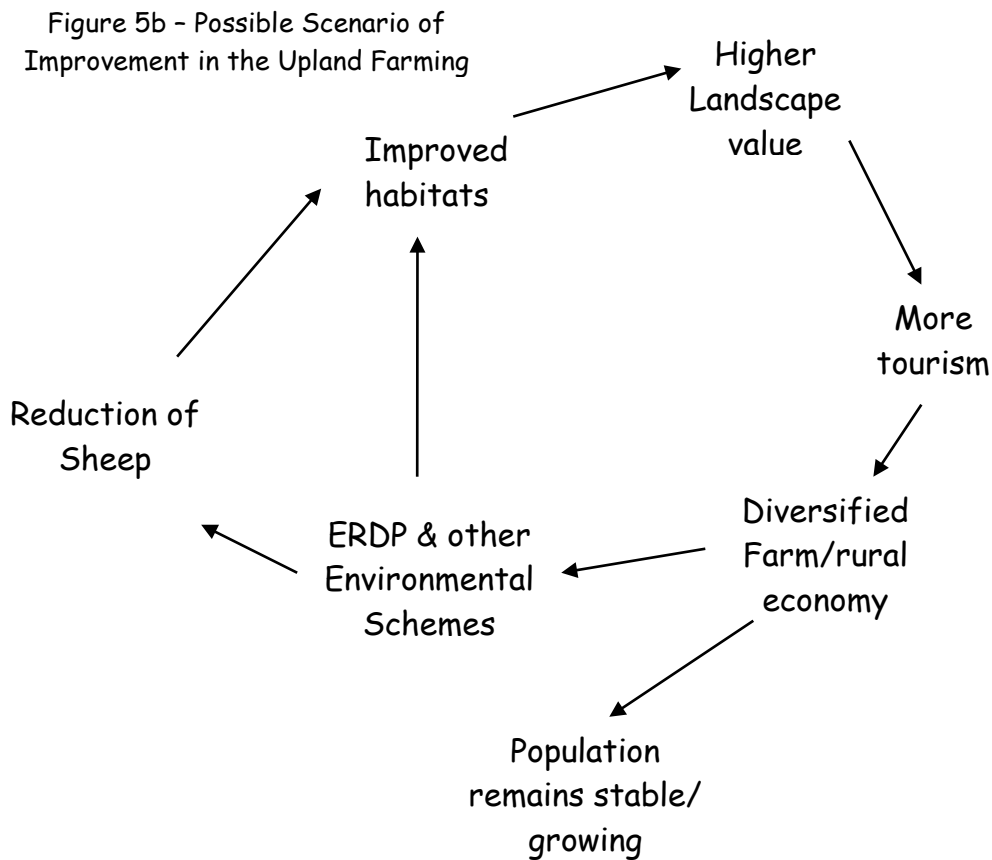
traditional skills. The idea is that environmental grants will switch farmers from production to post- productivism, and in turn make up the financial losses. However, money does not provide traditional skills and local knowledge to gather effectively and stop sheep wandering. These are situations that require long term strategic management and a retained local agricultural population.

The other possibility is that the funding from post-productivist initiatives leads to destocking that *improves* the landscape through the amelioration of upland habitats. In turn these landscapes should encourage more tourism providing farmers with more opportunities to diversify their enterprise base (Figure 5b). Thus in this scenario the ERDP has been effective in its aims.

5 Conclusions

In summary, it would seem that the role of sheep reduction on the fells plays an important role in the success or failure of the ERDP in upland areas. How agri-environment and environmental initiatives address stocking densities on a pragmatic level has therefore become pivotal to the debate (Figure 6). In order for stocking

densities to be set at appropriate levels for each unique fell, local knowledge, cumulative expertise and social networks are important to avoid the pit falls of



reduced stocking or over stocking. Whilst it is undeniable that overstocking has occurred and led to a wide range of environmental damage, the issue should be now to reduce rates gradually to accommodate the ecological re-adjustment of the relationship between grazing livestock and habitats along with the gather management. The ERDP therefore needs to acknowledge and focus on the dual issues of reduction of stocking and loss of labour to ensure the survival of an upland landscape fit for its current and future multi-purpose status.

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References

- Aitchison J, Crowther K, Ashby M, Redgrave L (2000) ‘*The Common Lands of England: a biological survey. County Report for Cumbria.*’ Rural Surveys Research Unit Aberystwyth Contract for DEFRA
- Backshall J., Manley J. & Rebane M (2001) *The Upland Management Handbook.* English Nature: Peterborough
- Burton R, Mansfield L, Schwarz G, Brown K & Convery I (2005) ‘*Social Capital in Hill Farming*’ Report for the International Centre for the Uplands: Hackthorpe

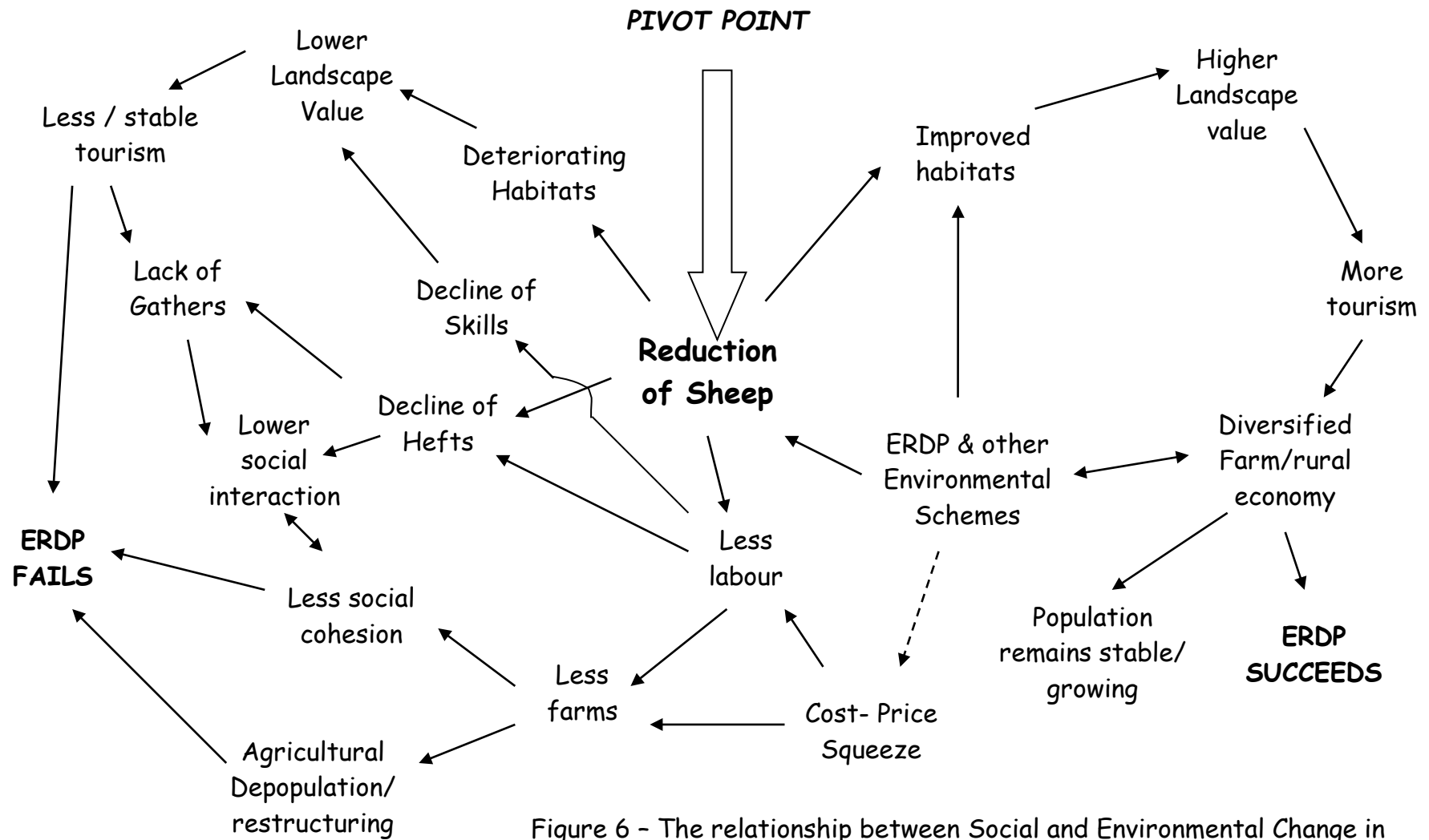


Figure 6 - The relationship between Social and Environmental Change in Upland Farming Landscapes

- Carey PD, Barnett CL, Greenslade PD, Hulmes S, Garbutt RA, Warman EA, Myhill D, Scott RJ, Samrt SM, Manchester SJ., Robinson J., Walker KJ, Howard DC & Firbank LG (2002) 'A comparison of the ecological quality of land between an English Agri-environment scheme and the countryside as a whole.' *Biological Conservation* Vol108 p183 to 197
- Chadwick, L. (2003) *The Farm Management Handbook 2002/*' SAC, Ayr
- Chitty, G. (2002) *Study of Cultural Landscape Significance: proposed Lake District World Heritage Site*. Hawkshead Archaeology & Conservation, Carnforth
- Countryside Commission (1998) '*Countryside Character: the character of England's natural and man-made land Volume 2 North West*' Countryside Commission: Cheltenham
- Countryside Agency (2000) '*The State of the Countryside 2000*' Countryside Agency: Cheltenham
- Countryside Agency (2001) '*The State of the Countryside 2001.*' Countryside Agency: Cheltenham
- Cumbria County Council (1997) '*State of the Environment Audit*' Cumbria County Council: Carlisle
- English Nature (1995) '*Natural Areas Initiative*' CD Rom English Nature: Peterborough
- English Nature (2001) '*State of Nature: the Upland Challenge.*' English Nature: Peterborough
- Evans J (2003) '*The Mid-term Evaluation of the England Rural Development Programme (ERDP) : Hill Farm Allowance.*' ADAS Consulting Ltd: Wolverhampton
- Frame J (1992) '*Improved Grassland Management.*' Farming Press: Ipswich
- Franks J, Lowe P, Phillips J & Scott C (2003) 'The impact of foot and mouth disease on farm businesses in Cumbria' *Land Use Policy* Vol 20 p159 to 168
- Fielding, A.H. & Haworth, P. (1998) '*Upland Habitats*' Routledge, London
- Finch, C. & Slater, J. (2003) *The Mid Term Evaluation of the England Rural Development Programme (ERDP) Countryside Stewardship Scheme*. ADAS Consulting Ltd, Wolverhampton
- Fuller, R.J. *et al* (2002) Declines of ground nesting birds in two areas of upland farmland in the south Pennines of England. *Bird Study* 49:146-152
- Grigg D (1995) '*An Introduction to Agricultural Geography*' 2nd Edition Routledge: London
- Halfacree K & Boyle P (1998) 'Migration, Rurality and the post-productivist Countryside Ch 1 in: '*Migration into Rural Areas: theories and issues.*' John Wiley & Sons: Chichester
- Hester, A.J. *et al* (1996) Effects of season and intensity of sheep grazing on tree regeneration in a British upland woodland. *Forest Ecology and Management*, 88: 99-106
- Hulme PD., Merrell BG., Torvell L., Fisher JM., Small JL. & Pakeman RJ (2002) Rehabilitation of degraded *Calluna vulgaris* (L.) Hull-dominated wet heath by controlling sheep grazing' *Biological Conservation* Vol107 p351 to 363
- Institute for European Environmental Policy (2004) '*An assessment of the impacts of hill farming in England on the economic, environmental and social sustainability of the uplands and more widely.*' Main Report Volume 1. IEEP, Land Use Consultants and GHK Consulting: London
- Institute for European Environmental Policy (2004) '*An assessment of the impacts of*

- hill farming in England on the economic, environmental and social sustainability of the uplands and more widely.* Literature Review and Consultations Volume 2. IEEP, Land Use Consultants and GHK Consulting: London
- Institute for European Environmental Policy (2004) *'An assessment of the impacts of hill farming in England on the economic, environmental and social sustainability of the uplands and more widely.'* Reports of case studies Volume 3. IEEP, Land Use Consultants and GHK Consulting: London
- Johnston J, Webb S & Hunt D (2005) *'English Nature's Sustainable Grazing Initiative in Cumbria: a summary of English Nature's work in the Cumbrian Uplands from 2002 to 2005.'* English Nature: Kendal, Cumbria
- Mansfield L & Martin H (2004) *'Evaluation of the Fell Farming Traineeship Scheme'* report for Cumbria Fells & Dales LEADER+: Penrith
- Mansfield L., Brown G and Martin H (in preparation) *'Sustaining Upland Agriculture: the Fell Farming Traineeship Scheme.'*
- Miles J (1988) Vegetation and soil change in the uplands.' In: Usher MB, Thompson DBA (eds) *'Ecological Change in the Uplands'*. Special Publication No7. BES, Blackwell Scientific: Oxford p57 to70
- Milligan AL., Putwain PD., Cox ES., Ghorbani J., Le Duc MG. & Marrs RH (2004) *'Developing an integrated land management strategy for the restoration of moorland vegetation on Molinia caerulea – dominated vegetation for conservation purposes in upland Britain.'* *Biological Conservation* Vol119 p371 to 385
- MAFF (1997) *Lake District ESA – report of environmental monitoring 1993 to 1996.* MAFF, London.
- MAFF (2000a) *'England Rural Development Programme 2000-2006'* Appendices B-F MAFF: London
- MAFF (2000b) *Agenda 2000: Annex 3*, MAFF: London
- Morris, C. & Young, C. (1997) Towards Environmentally beneficial farming? – an evaluation of the Countryside Stewardship Scheme *Geography* 82(4): 305 - 316
- Newby H (1985) *'Green and pleasant land? Social Change in rural England.'* Wildwood House: London
- NORDERGIO (2004) *'Mountain Areas in Europe: Analysis of mountain areas in EU member states, acceding and other European countries.'* European Commission Contract No2002CE160AT136
- Pakenham RJ., Le Duc MG & Marrs RH (1997) *'Moorland vegetation succession after the control of bracken with asulam.'* *Agriculture, Ecosystems and Environment* Vol 62 p41 to52
- Petit, S. *et al* (2003) Field Boundaries in Great Britain: stock and change between 1984,1990 and 1998. *Journal of Environmental Management* 67:229-238.
- Ratcliffe D (2002) *'Lakeland: the Wildlife of Cumbria.'* HarperCollins: London
- Russell N (1994) *'Grassland Conservation in an Arable Area: the Case of the Suffolk River Valleys.'* Ch2 in: Whitby M (ed) *'Incentives for Countryside Management: the Case of Environmentally Sensitive Areas.'* CAB International: Wallingford
- Sansom AL (1999) *'Upland Vegetation Management: the impacts of overstocking.'* *Water, Science and Technology* Vol39(2) p85 to 92
- Slater, J. (2003) *The Mid Term Evaluation of the England Rural Development*

- Programme (ERDP) Environmentally Sensitive Areas*. ADAS Consulting Ltd, Wolverhampton
- SQW Ltd (2003) *ERDP Mid term Evaluation: sub regional case study reports*. SQW Ltd, Cambridge
- Thompson DBA, MacDonald AJ, Marsden JH & Galbraith A (1995) 'Upland heather moorland in Great Britain: a review of the international importance, vegetation change and some objectives for nature conservation.' *Biological Conservation* Vol71(2) p163 to 178
- Welch D (1986) 'Studies in the grazing of heather moorland in north east Scotland. I. Site descriptions and patterns of Utilisation.' *Journal of Applied Ecology* Vol 21 p179 to 195
- Winchester, AJL. (2000) *The Harvest of the Hills: rural life in Northern England and the Scottish Borders 1400 to 1700*. Edinburgh University Press, Edinburgh