The rationale and potential impact of HFA reform

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The views expressed in this report are those of the authors and are not necessarily shared by other members of the University or by the University as a whole.

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1. Introduction

The Centre for Rural Research, with the assistance of Dr Janet Dwyer of the University of Gloucestershire, were commissioned to undertake this work in order to assist Exmoor National Park Authority with gathering evidence on which to base their submission to the consultation exercise on the proposed new Upland Rewards Scheme. The overall aim of the project was to provide an independent assessment of the implications of reform to the existing HFA system. The specific objectives of the project were to:

- Review the rationale for LFA support
- Model the impact to date of CAP reform on Exmoor (referred to as the "base" position in subsequent analysis)
- Consider the impact of alternative reform scenarios
- Review issues arsing from the economic modelling in the light of the proposals in the consultation paper

These objectives were agreed prior to the publication of the consultation paper on the new rewards structure. Given the complexity of the various options eventually proposed, the research has concentrated more on considering future impacts than in reporting the impact of CAP reform to date. Indeed, the nature of the proposals outlined in the consultation document are such that it has been necessary to make several assumptions regarding the operation of the alternative options. These assumptions are detailed below. The assumptions are necessarily a simplification. This gives the economic model greater robustness but means that the results should be taken as a guide rather than a prediction. However, we are confident that in combination with the results from the farm survey that our analysis presents an accurate picture of the likely **short-term** response to the various HFA reform options. The structure of the remainder of this report is as follows: section 2 reviews the evolving rationale for LFA support. Section 3 details the assumptions and methodology used to model the impact of the reform proposals. The results of the modelling exercise on Total Household Income and Net Farm Income are presented in Section 4. Section 5 considers the implications at the farm level drawing on the results of a postal survey of 109 Exmoor farmers and Section 5 presents some brief conclusions.

2. The evolving rationale for LFA policy

In its original formulation, the European Community's rationale for offering aid to support its 'Less Favoured Areas' was both social and environmental but with an emphasis upon preventing depopulation and land abandonment. The primary focus was upon recognising that these were parts of the community facing particularly severe 'natural disadvantages' by comparison with most farms. The disadvantage arose due to a combination of geographic, climatic and socio-economic factors, and thus compensation was offered to ensure the continuance of farming activity in these areas, against prevailing economic trends. The basic model of aid was derived from the previous Hill Farming Support Scheme which had operated in the UK for a decade or more prior to its accession to the EC in 1973. Under this, farmers in hill areas

received payments for keeping sheep and cattle in an effort to support their businesses and maintain the farmed landscapes of these areas. Thus the 1975 LFA Directive (75/268/EEC) had as its stated aim: 'the continuation of farming, thereby maintaining a minimum population level or conserving the countryside' in certain agriculturally 'less favoured areas'. This was to be achieved by selective financial incentives – headage payments on specified types of livestock or area payments for specific types of crops, and enhanced structural aids for farm investment. As a reply by the Commission to a European parliamentary question (OJ C287 4.11.82) explained: Directive 75/268 may not be used to encourage conservation *per se* but is to be used for the encouragement of farming which, in turn, will have a positive effect on the conservation of the countryside (quoted in Haigh, ed (2006), Chapter 9). Designated LFA areas fell into one of three categories:

1. mountain areas handicapped by a short growing season because of high altitude, or at a lower altitude by steep slopes, or by a combination of the two – Article 23(1);
2. areas in danger of depopulation: regional in character, where the conservation of the countryside is necessary and which exhibit all the following disadvantages: land of low productivity, poor economic situation and a low or dwindling population dependent on agriculture – Article 24;
3. other small areas affected by specific handicaps 'in which farming must be continued, where necessary and subject to certain conditions, in order to conserve the environment, maintain the countryside and preserve the tourist potential of the area or in order to protect the coastline'.– Article 25.

When the CAP structures aids were regrouped in 1985, this Directive was replaced by Regulation 797/85 which put a stronger emphasis on conservation of the environment but did not change the basic system or the aims of the support. However, in 1999 LFA aid was regrouped again under the new Rural Development Regulation (RDR) 1257/1999, and both its goals and its policy instruments were changed slightly. Under the RDR, LFA aid must contribute to the following objectives:

- to ensure continued agricultural land use and thereby contribute to the maintenance of a viable rural community (this, and the next one are similar to previous aims);
- to maintain countryside;
- to maintain and promote sustainable farming systems which in particular take account of environmental protection requirements (this is entirely new).

To achieve these aims, a new fourth category of eligible area has been added to the previous list, covering areas where farming activities were restricted by environmental protection legislation such as Natura 2000 sites. In all types of area, payments must be fixed at a level which avoids overcompensation; i.e. it 'is sufficient in making an effective contribution to compensation for existing handicaps, and duly differentiated by taking into

account regional situations and development objectives, the severity of permanent handicaps and particular environmental problems to be solved, and the type of production or economic structure of the holding' (CEC, 1999). In addition, the new provisions only allow payments per hectare of eligible land (plus enhanced rates for farm investments and diversification). This change was introduced partly to prevent payments being an incentive for eligible producers to stock too heavily on sensitive land within LFAs, thus causing environmental damage. Perhaps more importantly it also helped to ensure that the aid could be viewed as decoupled from production and thus eligible as 'green box' (exempt from requirements to be cut), in the context of World Trade agreements.

In 2003 the European Court of Auditors produced a report on LFA support. It was highly critical of the current system of defining LFAs, questioning the rationale for a pattern of designation and levels of aid which appeared to bear no consistent relation to common notions of relative disadvantage. It called for greater standardisation between Member States and a general review of the system. As a result, the draft new rural development Regulation for 2007-13 (EAFRD), submitted by the Commission in July 2004 (COM(2004) 490) proposed a redefinition of LFAs, such that all LFAs outside Natura 2000 (current category 4) sites or true mountain areas (category 1) should be renamed 'intermediate zones' and defined purely by natural or agricultural conditions rather than by reference to any socio-economic criteria. Depending on the nature of these conditions, the general perception was that this would have led to a significant decrease in eligible LFA area across the EU (although the implications in the UK were less clear). In the event, the proposal proved too controversial and difficult for the negotiations, and EAFRD was agreed without making any significant changes to the LFA measure. However, Member States agreed to help the Commission to work on a revised definition for application in 2008 or 9.

So in overview, what we see through this thirty year period is a gradual refinement of the purpose of the aid which places increasing emphasis upon its role in helping farmers to maintain environmental benefits in designated areas. This involves a basic compensatory mechanism which is more geographically delimited but otherwise more general in its purpose than the types of aid offered through EU agri-environment schemes. However throughout, there remains an explicit commitment to 'the continuation of farming' within the regulation as the principal means by which countryside conservation should be achieved, through application of the aid.

The changing rationale for LFA aid has perhaps been more marked at the level of the UK's devolved administrations and in particular, in England. It is notable that in the consultation document on the future 'Uplands reward structure' in England (Defra, 2006), it is stated that:

The government wants to use any replacement for HFA as an effective tool for delivery of the wider public benefits that Defra has been set up to achieve…..In particular, it is expected that any new arrangements will contribute to Defra's PSA 3 – 'care for our natural heritage, make the countryside attractive and enjoyable for all and preserve biodiversity'. It will also make a contribution to PSA1 (promoting sustainable development) and PSA 5 (delivering more customer focussed competitive and sustainable food and farming). The text then links the measure to specific Defra strategic outcomes derived from these targets. Later on the document describes how this means refocusing support to strengthen the link between public expenditure and securing public benefits that the public wants and needs. It characterises the original purpose of LFA aid as being 'to sustain food production and because of perceived social benefits' and states that 'a production based approach' no longer fits with government policy. Finally it states that 'the government does not think it likely that [the existing LFA support mechanism] will prove to be the most effective way of using taxpayers money [in upland support] since it does not generate additional public benefits beyond the level required for cross-compliance'.

Thus it is clear that the document places no great emphasis upon either the perceived social benefits of hill farming per se, nor upon the link between countryside/public benefits and the continuation of farming in these areas. The aim is very clearly couched in terms of public benefits and the explicit nature of these is described as environment and amenity. The issue of whether and to what extent the public desires a farmed upland landscape, and how targeted aid might underpin the viability of farming, as an additional 'public good' in these areas which perhaps would not be maintained without some specific support working against market-driven trends, is not raised or discussed. It can be argued that this is a crucial omission given that, as the analysis presented below for the case of Exmoor will show, certain reform options could lead to radical agricultural change and a potentially 'less farmed' and an environmentally transformed Exmoor.

3. Methodology and assumptions for the economic model

In order to model the options presented in the consultation paper on the new uplands rewards structure, data and knowledge regarding farming on Exmoor derived from the FBS from the southwest of England for both DA and SDA farms was used to construct a mathematical programming model. In using FBS data it is necessary to acknowledge that the data relates to the accounting year (April to March) 2004-2005 and that data on moorland areas is calculated on a forage hectare basis. For each farm type, the ratio of DA, SDA and moorland (common and private grazing) is calculated using a breakdown of income from the HFA payment. This enables a more accurate depiction of income redistribution changes resulting from the potential policy reforms. Finally, in modelling farms without existing agri-environmental schemes, income values for such schemes incorporated in the FBS data were removed and a concomitant positive value was included in the costs that was calculated from Defra's Exmoor ESA payments and income forgone

values (Defra 2002). This is particularly relevant for modelling Option 2. Given these general assumptions, more specific assumptions are presented below concerning the proposed uplands rewards options.

Baseline option assumptions

The model assumes that the present structure of HFA payments is continued and reflects the situation as described in the Farm Business Survey Data. As such, the baseline provides a comparison for the other options.

Option 1: Agri-environment with LFA payments

From 2007, the HFA is abolished and in its place a new LFA reward payment is introduced. All farmers with SDA land will be eligible for the new payment as long as they also enter their farm into an Environmental Stewardship Scheme or are in an existing scheme. However, DA land is excluded from this option, leading to a redistribution of income to farmers with SDA Land. Cumulus (2005) estimate that this option will increase income for LFA payments to SDA farms by 23%, which constitutes a per hectare increase from £23.62 to £29.08. However, since Exmoor farmers receive £24.29 per hectare on average in HFA payments this increase is expected to be marginally less than 20%. Therefore, it is this latter increment that is used in the modelling exercise for Exmoor farms rather than that derived by Cumulus.

On Exmoor, Lobley et al. (2004) reported a high uptake of both HFA and ESA payments in the National Park. Indeed, 65% of farmers claimed HFA while, 77% claimed ESA payments. These increased when only moorland farmers (SDA farmers by definition) were considered to 74% and 86% respectively. Given these findings, it is reasonable to assume that 86% of SDA farmers in the Exmoor National Park would be eligible for an LFA payment with an agri-environmental incentive. New uptake by farmers not already involved in Environmental Stewardship (ES) will increase their farm costs although these are compensated for in the ES payment as income forgone. Since ES payments are designed to be broadly neutral, the net financial impact of joining a scheme would be zero. Farmers of holdings that do not join or are not already part of an agri-environmental scheme will receive no payments.

Option 2 Uplands environmental stewardship scheme based on costs and income forgone

Under this option, it is proposed that the existing HFA is abolished. The funds saved would be used to implement a new Uplands Environmental Stewardship Scheme. Unlike Option 1, there would not be an additional LFA incentive. Only those farmers who do not currently have an Environmental Stewardship, Countryside Stewardship or ESA agreement would be eligible for this new payment. As the consultation document states: '*farmers who have an existing agri-environment agreement (CSS, ESA, ES) would not be*

eligible to receive any increased payment' (Defra 2006: p. 18). This is a very important consideration within Exmoor National Park since the majority of farmers already claim ESA payments, as discussed above. According to Cumulus (2005) 50,748 ha of land in the Exmoor ESA is already under agreement accounting for 75% of the total ESA area, with 98% of this in a Tier 1 agreement. Given this, it is assumed that the majority of upland farmers within Exmoor National Park would not be eligible to receive additional rewards for entering a ring fenced Upland Entry Level Scheme (UELS), an existing ELS or HLS scheme.

Farmers not presently in an ESA agreement who enter an UELS or ELS are likely to be expected to manage different landscapes in accordance to prescriptions similar to those of Tier 1 in the Exmoor ESA scheme. For example, EL2 of the ELS (manage permanent in-bye grassland with low inputs is less restrictive than the similar ESA Tier 1 (Part 2A) but more restrictive than ESA Tier 1 (Part 2B). Examining Defra's income forgone calculations (see Table 1) for the Exmoor ESA shows that some additional costs are sustained through the management of some tiers particularly as whole farm management is necessary to be eligible for the scheme. Therefore, it is reasonable to assume that a payment of £35 per hectare for an upland environmental stewardship scheme would on average lead to 91% of the costs being covered for an entry level scheme (equivalent to a Tier 1 ESA scheme parts 1 to 4 excluding grassland management supplement). Modelling a HLS for the uplands uses the higher tiers of the Exmoor ESA to calculate income forgone (see Table 2). In this case, it is reasonable to assume that a payment of £80 per hectare for upland HLS would on average lead to all the costs being covered plus an incentive of 13% above costs. The model assumes that moorland will be entered into the HLS while in-bye and enclosed rough grazing is only entered into the UELS. This has the affect of creating a whole farm approach while capturing an incentive for greater environmental stewardship. In reality, the area of land entered into a HLS is likely to be less since not all types of moorland will be targeted. However, without specific details of the scheme such targeting is difficult to predict. Therefore, values used for moorland on Exmoor in the model represent maxima.

Option 3 No LFA specific support assumptions

Under this option, all existing HFA payments would be abolished. There would no longer be any additional payments for farmers in the LFA although they would be able to apply for Environmental Stewardship in the normal way. As such, the HFA is removed from farms with both SDA and DA land.

Table 1: Existing Exmoor ESA payments and costs used to model UELS

Exmoor ESA Tiers (potential UELS)	Tier Payment £ ha^{-1}	Cost of Tier £ ha^{-1}	Overall Income Gain/ Loss £ ha^{-1}	% of costs covered by £35 payment
Tier 1 (Part 1) - All land	16	30	-14	117
Tier 1 (Part 2A) - Improved permanent grassland	19	32	-13	109
Tier 1 (Part 2B) - Low input permanent grassland	31	58	-27	60
Tier 1 (Part 3) - Enclosed unimproved permanent grassland	40	57	-17	61
Tier 1 (Part 4) - Moorland	34	33	1	106
Mean Payments/costs	**28**	**42**	**-14**	**91**

Source: Defra (2002)

Table 2: Existing Exmoor ESA payments and costs used to model UHLS

Exmoor ESA Tiers (potential UHLS)	Tier Payment £ ha^{-1}	Cost of Tier £ ha^{-1}	Overall Income Gain/ Loss £ ha^{-1}	% of costs covered by £35 payment
Tier 1 (Part 5) - Heather moorland and coastal heath	50	49	1	163
Tier 2 (Part 1) Heather moorland and coastal heath	60	59	1	136
Tier 2 (Part 2) Recreation of land to heather moorland or coastal heath	225	194	31	41
Mean Payments/costs	**112**	**101**	**11**	**113**

Source: Defra (2002)

4. Predicted changes in Net Farm Income (NFI)[1] and Total Household Income (THI)[2]

This section presents the results of the economic modelling exercise at four different levels: the aggregate impacts on Exmoor National Park; the impact on Total Household Income; the impact on Net Farm Income at the farm level and, finally, the impact on NFI ha^{-1}.The predicted changes vary according to the option considered, the ratio of SDA to DA land, and whether farmers are already part of an agri-environment scheme. Whilst the baseline option is not reported directly, it is incorporated in the other options as a comparator.

[1] NFI (Net Farm Income) represents the reward to the farmer and spouse for their own manual labour and management return on tenant-type capital invested in the business.

[2] THI (Total Household Income) represents income from all sources, not just conventional agricultural production.

At an aggregate level it is estimated that 'Exmoor Farming PLC' currently generates a NFI of over £4.2m (see Table 3). For Exmoor National Park as a whole the implementation of Option 1 would see a marginal increase in total NFI to between £4.35m and £4.57m depending on the exact proportion of DA and SDA land. The most likely impact is a 5% increase in NFI. The other reform options however, would all see a significant reduction on the NFI of farming on Exmoor (the reasons for this are discussed in detail below).

Table 3: Aggregate impact of reform options for Exmoor National Park†

Option	Total NFI	Percentage change over base option
Base	£4,288,817	n/a
Option 1 Average	£4,522,031	5%
Option 1 Lower (Some DA Land)	£4,358,209	2%
Option 1 Upper (All SDA Land)	£4,579,720	7%
Option 2 (UELS - Average)	£3,013,256	-30%
Option 2 (No ESA - Do not join)	£2,984,838	-30%
Option 3 (No LFA Support)	£2,815,254	-34%

† Based on additional assumptions regarding the area entered into the ESA and the distribution of different farm types.

Source: CRR Farm Income Model

In order to give a clearer idea of the implications for farm households the following two tables present the results of the economic model in terms of Total Household Income (THI) and NFI. THI has been introduced as an additional income measure to recognise that many farm households have sources of income beyond farming. For Exmoor farmers, this additional income element for 2004-05 was on average £10,714. As Table 4 indicates THI varies according to farm type, ranging from just over £20,000 to just under £27,000. It should be remembered that these figures are for household income not an individual's salary. On average (for SDA farms) THI would increase under Option 1 although the amount of change would vary according to the portions of SDA and DA land on an individual farm. Under Option 2 THI would fall for all farms although the extent of the loss would depend on whether or not a farmer is already in the ESA and if not, if they decide to enter the new UELS. Table 5 presents the same analysis but this time just for NFI. The figures therefore, are much lower but the overall pattern remains the same. Excluding DA only farms, HFA reform Option 1 is likely to produce marginal income benefits for Exmoor farmers while Options 2 and 3 will lead to progressively greater losses of income.

Table 4: The impact of reform options on Total Household Income

Option	Total NFI per farm			
	SDA Cattle and Sheep farm	SDA Cattle only†	SDA Sheep only	DA cattle and sheep farm
Base	£26,922	£23,332	£25,560	£20,081
Option 1 Average	£27,787	£24,197	£26,425	n/a
Option 1 Lower (Some DA Land)	£27,179	£23,591	£25,817	n/a
Option 1 Upper (All SDA Land)	£28,001	£24,413	£26,639	n/a
Option 2 (UELS - Average)	£24,187	£20,599	£22,825	n/a
Option 2 (No ESA - Do not join)	£23,795	£20,206	£22,433	n/a
No Support	£21,443	£17,855	£20,154	£17,271

† It is assumed that cattle only farmers produce 25% finished cattle and 75% store cattle. As a result, SDA sheep only and SDA cattle only farm can not be summed and averaged to create a total for the combined SDA cattle and sheep farms.

Source: CRR Farm Income Model

Table 5: The impact of reform options on Net Farm Income

Option	Total NFI per farm			
	SDA Cattle and Sheep farm	SDA Cattle only†	SDA Sheep only	DA cattle and sheep farm
Base	£16,208	£12,618	£14,846	£9,367
Option 1 Average	£17,073	£13,483	£15,711	n/a
Option 1 Lower (Some DA Land)	£16,465	£12,877	£15,103	n/a
Option 1 Upper (All SDA Land)	£17,287	£13,699	£15,925	n/a
Option 2 (UELS - Average)	£13,473	£9,885	£12,111	n/a
Option 2 (No ESA - Do not join)	£13,081	£9,492	£11,719	n/a
No Support	£10,729	£7,141	£9,440	£6,557

† It is assumed that cattle only farmers produce 25% finished cattle and 75% store cattle. As a result, SDA sheep only and SDA cattle only farm can not be summed and averaged to create a total for the combined SDA cattle and sheep farms.

Source: CRR Farm Income Model

Finally in this section, as Table 6 indicates, under Option 1 the NFI ha^{-1} for a typical SDA cattle and sheep farm within Exmoor National Park is £104. The redistribution of the LFA payment to only SDA farms that are covered by an agri-environment agreement would, on average, increase NFI ha^{-1} by £6. Farms that are entirely comprised of SDA land would see their NFI increase marginally more by £7 ha^{-1}, whilst holdings with larger areas of DA land will have reduced increases in NFI ha^{-1} because of the redistribution effect. Other farm types within Exmoor National Park fare similarly, although specialist beef farms are expected not to benefit as much as specialist sheep farms since those selling finished cattle tend to have more DA land.

Table 6: Predicted NFI ha^{-1} under Option 1 of the Uplands Rewards Structure

Farm Type	Base 2004 NFI ha^{-1}	Averag NFI $^{-1}$	Lower bou (S Land) NF $^{-1}$	Upper bo D N $^{-1}$
SDA Cattle and Sheep	£104	£11	£	£1
Specialist Beef (SDA)	£81	£8	£	£8
Specialist Sheep (SDA)	£96	£10	£	£1

Source: CRR Farm Income Model

Since DA farms would no longer be eligible for a LFA payment under this option, their NFI decreases from £60 ha^{-1} to £42 ha^{-1}, which is equivalent to Option 3 where there are no specific LFA payments. This outcome is the same for DA farms under Option 2, if it is assumed that they are not eligible for the new LFA incentive.

Under Option 2, the existing HFA is abolished and funds saved would be used to implement a new Uplands Environmental Stewardship Scheme, which might apply in SDA only (or possibly both SDA and DA). Unlike Option 1, there would not be an additional LFA incentive. In the first two years after 2007, only those farmers who do not currently have an Environmental Stewardship, Countryside Stewardship or ESA agreement would be eligible for this new payment. However, beyond this point, a new scheme could potentially provide new ES options to top-up existing agreements.

When the present LFA payment system is removed, SDA cattle and sheep farms with current ESA or similar should expect a decrease in NFI from £104 ha^{-1} to £69 ha^{-1}; specialist beef farms from £81 ha^{-1} to £46 ha^{-1}; and specialist sheep farms from £95 ha^{-1} to £60 ha^{-1}. Farms without a current agri-environment agreement that subsequently join a new Uplands Entry Level Scheme (UELS) are likely to be marginally better off compared to farms that decide not to join the scheme (see Table 7). Thus, cattle and sheep farms are likely to be £3 ha^{-1} better off (a NFI of £87 compared to £84 ha^{-1}). These margins are less for specialist beef or sheep farms.

Table 7: Predicted NFI ha^{-1} under Option 2 of the Uplands Rewards Structure

Farm Type	Currently in ESA or similar & not eligible for UELS NFI ha^{-1}	No ESA or similar & joins UELS NFI ha^{-1}	No ESA or similar & does not join UELS NFI ha^{-1}
SDA Cattle and Sheep	£69	£87	£84
Specialist Beef (SDA)	£46	£77	£76
Specialist Sheep (SDA)	£61	£78	£76

Source: CRR Farm Income Model

Finally, if all additional support is removed from LFA farms, as under Option 3, there would no longer be any additional, LFA specific, payments for farmers in these areas, although they would be able to apply to Environmental Stewardship in the normal way. Consequently, removing HFA payments would decrease a typical SDA cattle and sheep farms NFI ha^{-1} by £35 (see Table 8) and a DA farm by a lesser amount of £18 ha^{-1}.

Table 8: Predicted NFI ha^{-1} under Option 3 of the Uplands Rewards Structure

Farm Type	Base NFI ha^{-1}	No Support NFI ha^{-1}
SDA Cattle and Sheep	£104	£69
DA farms	£60	£42
Specialist Beef (SDA)	£81	£73
Specialist Sheep (SDA)	£96	£61

Source: CRR Farm Income Model

While the results of the various options reported above point to a mixture of outcomes depending on farm type, enterprise mix, land classification and participation in agri-environment schemes, on Exmoor for SDA farmers, Option 1 is the likely to be the best option in the short term. No particular option, other than the status quo is likely to benefit DA farms however. Moreover, these predicted incomes assume that the Single Payment is fixed at the 2004 historic rate. Clearly, any replacement of the HFA regime is likely to be dwarfed by adjustments in the level single payment as this changes from an historic to an area based system, alongside increased modulation.

5. The response at the farm level

In order to explore the implications of the reform proposals and the modelling outcomes at the farm level, a postal questionnaire was designed which incorporated the modelling results for the main farm types found on Exmoor. For each option (including the baseline) farmers were presented with data on the likely impact on NFI and then asked a panel of questions regarding their plans for the business. Although there are recognised limitations to the postal survey approach, given the short time scale and need to gather the views of a large number of farmers this represented a very acceptable approach and one which gives a good indication of respondents preferred options and the likely impact on plans for the future.

A total of 258 farmers with land inside Exmoor National Park were surveyed in this research, all of which were over 10 ha in size and therefore eligible for the current HFA payment. Of these, six were returned as the farmer had either died or moved away. Two further respondents indicated that they had no land within the Park's boundaries and were also removed from the sample. There was one addition to the sample from a questionnaire downloaded from

the CRR website, the respondent of which was not recorded on the sample database. As such, the final sample size was 251 farmers. From this sample, 112[4] useable questionnaires were returned giving a response rate 45%. This is a very good result given the short time farmers had to respond and the complexity and (necessarily) repetitive nature of the questionnaire.

Sample characteristics

Respondents to the farm survey reflect a good cross section of farming on Exmoor. Excluding common grazing, respondents are responsible for managing over 14,000 ha of Exmoor (some 27% of the farmed area of the National Park and more importantly, 33% of all of the park's LFA land). As Table 9 indicates, the majority (68%) of land on surveyed farms was under permanent grass with a smaller but nevertheless significant area under rough grazing (20%). Respondents also had grazing rights to 2,772 ha of common grazing. The majority of respondents (77%) operate farms of under 200 ha, with close of half operating farms of less than 100 ha (see Table 10). In terms of farm type (see Table 11), the vast majority of respondents (77%) operate mixed cattle and sheep farms whilst there are relatively few (13%) specialist sheep farms and other farm types. This is a good reflection of the farm type structure for the National Park as a whole.

Table 12 presents data on actual and intended applications to Environmental Stewardship. As can be seen, just under 16% already have an agreement under Environmental Stewardship and a further 23% plan to apply. Given the already high uptake of ESA agreements within the sample (76%) these application figures seem rather high. One explanation is hat is reflects a relatively large number of farmers who plan to exit their ESA agreement at the 5 year break point and then enter ES.

Table 9: Land use characteristics of postal survey respondents

Land Use Characteristics	Area (ha)	% Coverage
Rough grazing - sole rights	2818	19.8
Permanent grass	9730	68.3
Temporary grass	825	5.8
Arable	259	1.8
Set-aside	9	0.1
Woodland	519	3.6
Other	79	0.6
Total	**14239**	**100.0%**
Rough grazing - common rights	2772	--

Source: Farm Survey

[4] The analysis which follows is based on 109 usable questionnaires. Three additional questionnaires were returned too late to be included in the analysis.

Table 10: Farm size distribution of survey respondents

	Number of farms in each category	Percent of farms in each category
0-99 (ha)	50	47.2
100-199 (ha)	32	30.2
200-299 (ha)	12	11.3
300-399 (ha)	5	4.7
400-499 (ha)	6	5.7
500 (ha) or over	1	0.9
Total	**106**	**100.0%**

Source: Farm Survey

Table 11: Farm type characteristics of survey respondents

Farm Type	Number of respondents	% of total	% of farmed area
Specialist Sheep	14	13.1	4.8
Mixed Cattle and Sheep	83	77.6	88.8
Specialist Cattle	3	2.8	3.2
Other	7	6.5	3.1
Total	104	100.0	100.0

Source: Farm Survey

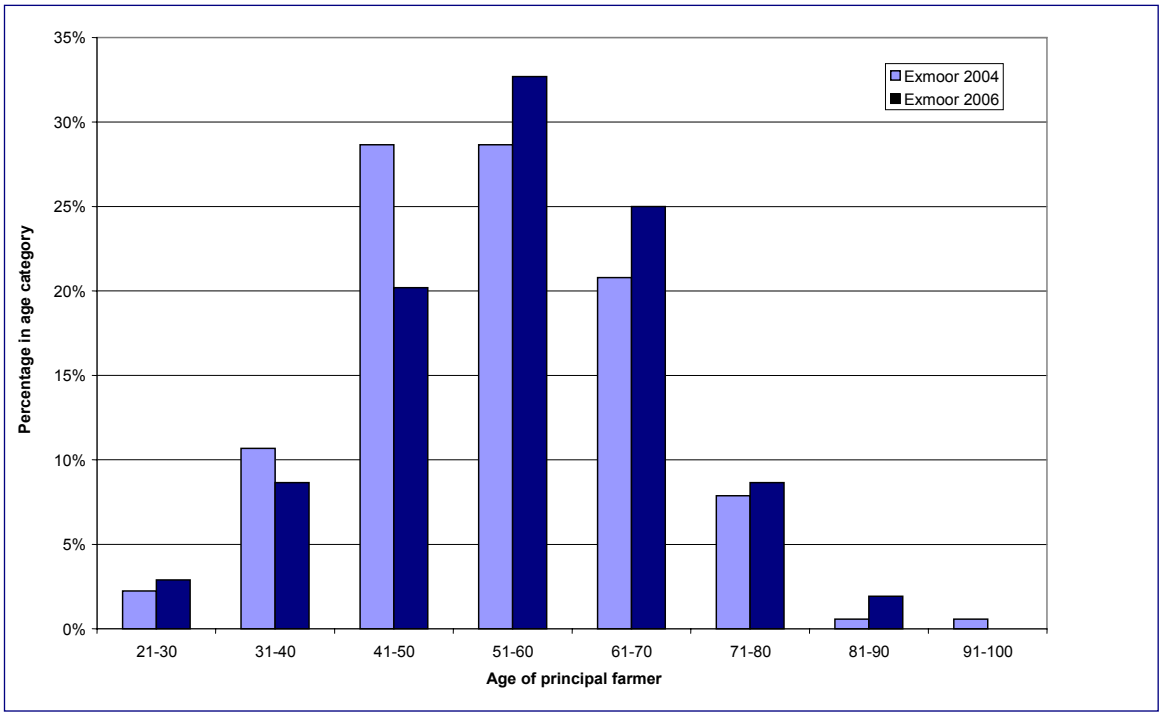
Table12: Applications to Environmental Stewardship by Exmoor farmers

Type of stewardship	Plan to apply	Have already applied	Application has resulted in an agreement	Total number
ELS	10.6	1.8	10.6	23.0
HLS	12.4	2.7	2.7	17.7
OELS	0.9	0.9	2.7	4.4
None of these	-	-	-	54.9
All responses	23.9	5.3	15.9	100.0%

Source: Farm Survey

Turning to the farmers themselves, as Figure 1 indicates, the survey has captured a range of farmers of different ages with slightly higher proportions of older farmers compared to our 2004 survey of Exmoor farmers (obviously, in part this is an effect of ageing). The mean age of the current sample is 56 years and 21% of the sample is aged over 65. One of the key concerns for the future of farming generally, and in the uplands in particular, is the ability of family farming to renew itself through intergenerational succession. Currently, for the whole sample, 44% reported having identified a successor. However, rates of succession vary markedly by age and for farmers in their mid-60s rates of succession increase to 60%.

Figure 1: Comparison of the age structure between Exmoor farmers in 2004 and 2006



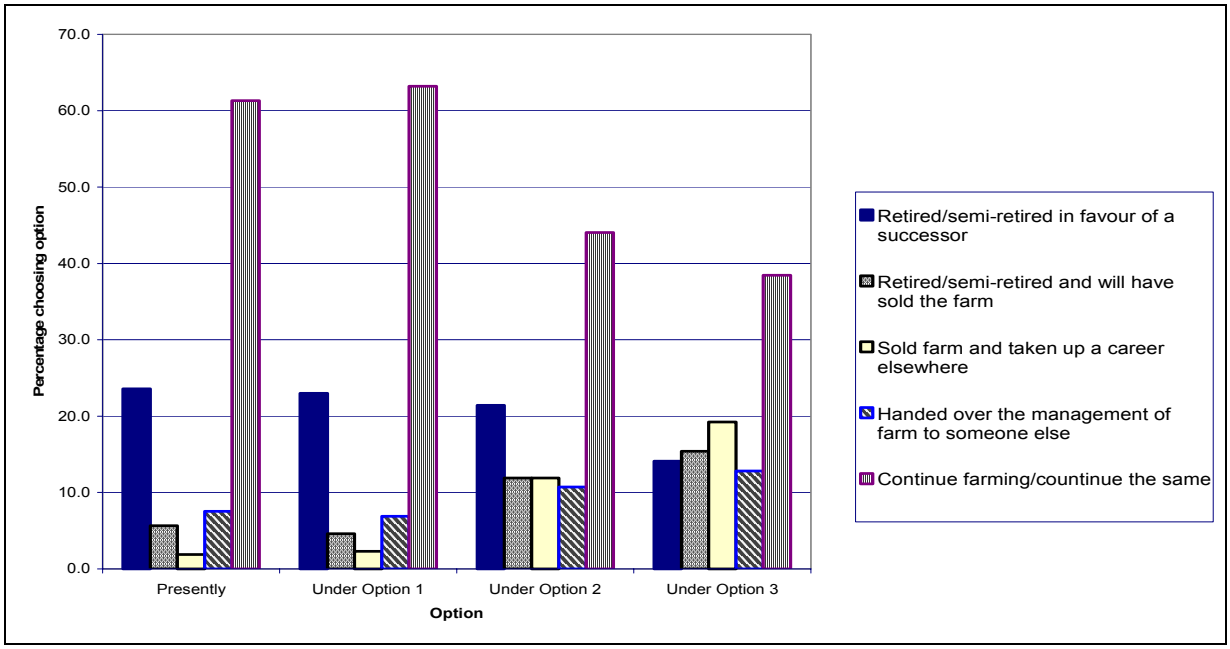
Source: Farm Survey and Lobley et al. (2004)

HFA reform

The following analysis of farmers' response to the proposed HFA reforms is presented in two stages. The first presents a 'macro' view, examining the impact on future intentions regarding remaining in farming, retirement or semi-retirement, selling the farm or handing it over to a successor. The second stage looks in more detail at the implications for farm business management and land management under each of the different reform scenarios.

Respondents were asked about their future plans and their likely responses under the different reform options given the results of the economic modelling exercise. As Figure 2 indicates (also see Table 13), despite some predictions, and in line with our earlier research, over 60% of Exmoor farmers currently expect to remain farming their farm in the short term at least (next 5 years). This proportion increases slightly under Option 1 (presumably a reflection of the marginal financial benefit) but declines markedly under Options 2 and 3. Under Options 2 and 3, not only is there a reduction in those expecting to continue farming themselves but there is also a reduction in expected succession rates and a notable increase in the number of those indicating that they would sell their farm (particularly under Option 3).

Figure 2: Succession and retirement plans: current situation and HFA reform options compared



Source: Farm Survey

Table 13: Succession and retirement plans: current situation and HFA reform options compared

Percentage

	Presently	Under Option 1	Under Option 2	Under Option 3
Retired/semi-retired in favour of a successor	23.6	23.0	21.4	14.1
Retired/semi-retired and will have sold the farm	5.7	4.6	11.9	15.4
Sold farm and taken up a career elsewhere	1.9	2.3	11.9	19.2
Handed over the management of farm to someone else	7.5	6.9	10.7	12.8
Continue farming/continue the same	61.3	63.2	44.0	38.5
Total	100.0	100.0	100.0	100.0

Number

	Presently	Under Option 1	Under Option 2	Under Option 3
Retired/semi-retired in favour of a successor	25	20	18	11
Retired/semi-retired and will have sold the farm	6	4	10	12
Sold farm and taken up a career elsewhere	2	2	10	15
Handed over the management of farm to someone else	8	6	9	10
Continue farming/continue the same	65	55	37	30
Total	106	87	84	78

Source: Farm Survey

Detailed farm management changes

Looking at Table 14, it is clear that based on the current situation, significant numbers plan to reduce cattle and sheep numbers (39% and 41% respectively) while a smaller but nevertheless significant number plan to reduce labour use. On the other hand, close to a third (31%) plan to increase their participation in diversification and other non-farming activities and to convert buildings for sale or rent (31%). Thirty-two percent also hope to increase their receipt of agri-environmental payments. It should also be noted that the majority do not intend to change the area of land they farm or to change their use of common grazing.

Table 14: Anticipated business changes over the next five years

Change	Level of Activity				
	No Change	Start	Increase	Decrease	Stop
Area farmed	73.4	1.1	11.7	11.7	2.1
Use made of commons grazing	83.9	0.0	6.5	6.5	3.2
Away wintering of breeding stock	72.7	12.1	0.0	6.1	9.1
Number of cattle	43.6	0.0	11.5	38.5	6.4
Number of sheep	45.1	1.1	12.1	40.7	1.1
Environmental payments	61.9	3.6	32.1	1.2	1.2
Level of labour used	64.0	2.3	5.8	26.7	1.2
Use made of contractors	72.6	1.1	12.6	10.5	3.2
Diversification & other non-farming activities	53.8	12.3	30.8	1.5	1.5
Significant agricultural capital investment	53.5	2.8	1.4	16.9	25.4
Convert buildings for sale/rent	65.7	31.4	2.9	0.0	0.0
Whole/part organic conversion	75.0	12.5	9.4	0.0	3.1

Source: Farm Survey

Under HFA reform Option 1, some subtle but important changes to existing plans are revealed. As the economic analysis has indicated Exmoor SDA farmers would benefit from the redistributive effects of Option 1 and it is equally clear that this would marginally increase confidence in the future with slightly more farmers planning to remain in control of their farm for at least the next five years. As Table 15 indicates, these changes are accompanied by a marked upturn in those planning to increase the use of commons grazing (rising from 6.5 to 14.3%) while fewer plan to reduce livestock numbers. Similarly, under Option 1 fewer farmers plan to increase diversification and building conversion for sale or rent. Generally then, the small additional income 'buffer' offered to SDA farmers under Option 1 appears just enough to slow down farming change or at least to reduce the incidence of change on Exmoor farms.

Table 15: Anticipated business changes over the next five years under HFA reform Option 1

Change	Level of Activity				
	No Change	Start	Increase	Decrease	Stop
Area farmed	80.0	0.0	9.4	7.1	3.5
Use made of commons grazing	78.6	0.0	14.3	7.1	0.0
Away wintering of breeding stock	70.6	5.9	2.9	8.8	11.8
Number of cattle	54.7	0.0	9.3	32.0	4.0
Number of sheep	54.2	0.0	12.0	32.5	1.2
Environmental payments	58.1	2.7	33.8	4.1	1.4
Level of labour used	68.1	0.0	0.0	29.2	2.8
Use made of contractors	71.4	0.0	10.4	15.6	2.6
Diversification & other non-farming activities	58.2	12.7	27.3	1.8	0.0
Significant agricultural capital investment	55.2	4.5	4.5	14.9	20.9
Convert buildings for sale/rent	72.7	15.2	12.1	0.0	0.0
Whole/part organic conversion	75.0	15.6	9.4	0.0	0.0

Source: Farm Survey

If the effect of Option 1 is to reduce planned change, then the impacts of both Options 2 and 3 would be to significantly accelerate the planned incidence of change with possibly major implications for the appearance and environmental quality of Exmoor National Park and, of course, serious implications for farm households. As Table 16 shows, under Option 2 those planning NOT to make any changes to livestock numbers are now in a minority with 41% and 45% of respondents respectively planning to reduce cattle and sheep numbers while 21% and 16% would stop cattle and sheep production entirely. These significant enterprise changes would be accompanied by a marked decline and cessation in the away wintering of breeding stock, reductions in farm size as land was released in parcels or, where farming activity ceased completely, whole farms were sold. At the same time 29% report that they would reduce their use of common grazing. Almost half (46%) report that they would cut their labour use with a further 15% indicating that they would cease employing labour. Contractors too would suffer as 31% report they would reduce their use of contractors while 17% would stop using contractors entirely. Not surprisingly, there would be little agricultural investment undertaken under this policy scenario with 22% indicating that they would scale back investment plans and 46% indicating that they would no longer undertake any investment. Option 2 would provoke an increase in plans for diversification compared to the baseline scenario but overall taking this analysis into account in combination with that in Figure 2, it is clear that Option 2 represents a kind of ‘tipping point’ at which time many more farmers plan to leave and widespread changes would ensue.

Table 16: Anticipated business changes over the next five years under HFA reform Option 2

Change	Level of Activity				
	No Change	Start	Increase	Decrease	Stop
Area farmed	62.3	0.0	2.6	18.2	16.9
Use made of commons grazing	60.7	0.0	3.6	7.1	28.6
Away wintering of breeding stock	48.4	3.2	6.5	16.1	25.8
Number of cattle	31.4	0.0	5.7	41.4	21.4
Number of sheep	28.9	0.0	10.5	44.7	15.8
Environmental payments	44.1	2.9	19.1	19.1	14.7
Level of labour used	35.3	0.0	0.0	45.6	19.1
Use made of contractors	44.3	0.0	7.1	31.4	17.1
Diversification & other non-farming activities	39.6	5.7	39.6	3.8	11.3
Significant agricultural capital investment	32.2	0.0	0.0	22.0	45.8
Convert buildings for sale/rent	50.0	10.5	18.4	2.6	18.4
Whole/part organic conversion	57.1	11.4	2.9	5.7	22.9

Source: Farm Survey

Finally, Option 3 would see a further broadening of the trends identified under Option 2. Twenty-five percent of respondents indicated that they would stop farming their land and between 60-70% would reduce livestock numbers or cease livestock production altogether. All forms of hired labour use would decline significantly and there would be little or no agricultural investment. Plans for diversification would increase as would plans for building conversion but overall the figures in Table 17 suggest a radical change in the nature and scale of farming on Exmoor.

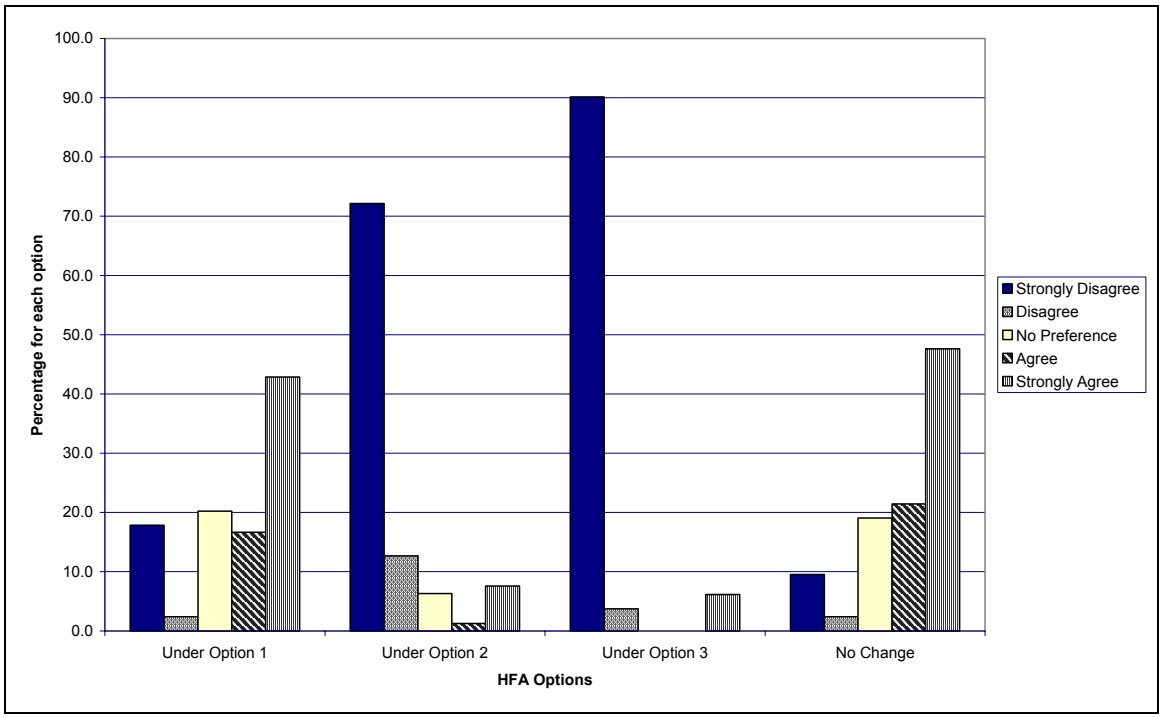
In order to gauge the support/acceptance of alternative HFA support options, for each of the proposed reform options respondents were asked to indicate, on a scale of 1 to 5, whether they strongly disagreed or strongly agreed with the proposal. Not surprisingly, the preferred option is for no change (69% of respondents either agreeing or strongly agreeing with 'no change'). This however, is not a realistic outcome of the reform negotiations and of the remaining options, Option 1 received the most support from Exmoor farmers with 60% starting that they either agreed or strongly agreed with the proposals contained within Option1 and only 20% disagreeing or strongly disagreeing with the proposal (see Figure 3 and Table 18).

Table 17: Anticipated business changes over the next five years under HFA reform Option 3

Change	Level of Activity				
	No Change	Start	Increase	Decrease	Stop
Area farmed	56.2	0.0	2.7	16.4	24.7
Use made of commons grazing	46.7	0.0	6.7	3.3	43.3
Away wintering of breeding stock	36.4	3.0	3.0	15.2	42.4
Number of cattle	24.2	0.0	6.1	40.9	28.8
Number of sheep	23.3	1.4	9.6	43.8	21.9
Environmental payments	41.5	4.6	20.0	16.9	16.9
Level of labour used	31.8	0.0	0.0	31.8	36.4
Use made of contractors	41.4	0.0	7.1	28.6	22.9
Diversification & other non-farming activities	36.5	1.9	40.4	1.9	19.2
Significant agricultural capital investment	29.8	1.8	1.8	10.5	56.1
Convert buildings for sale/rent	43.9	9.8	19.5	2.4	24.4
Whole/part organic conversion	52.8	11.1	5.6	2.8	27.8

Source: Farm Survey

Figure 3: Preferred HFA reform options



Source: Farm Survey

Table 18: Preferred HFA reform options

Percentage				
	Under Option 1	Under Option 2	Under Option 3	No Change
Strongly Disagree	17.9	72.2	90.1	9.5
Disagree	2.4	12.7	3.7	2.4
No Preference	20.2	6.3	0.0	19.0
Agree	16.7	1.3	0.0	21.4
Strongly Agree	42.9	7.6	6.2	47.6
Total	100.0	100.0	100.0	100.0

Number				
	Under Option 1	Under Option 2	Under Option 3	No Change
Strongly Disagree	15	57	73	8
Disagree	2	10	3	2
No Preference	17	5	0	16
Agree	14	1	0	18
Strongly Agree	36	6	5.0	40
Total	84	79	81.0	84

Source: Farm Survey

6. Discussion and conclusions

Reform of the current HFA system, following on so closely from what in many ways can be regarded as the most radical reform of the CAP, has the potential to significantly affect farming on Exmoor and, by extension, the environment and economy of the National Park. In its consultation paper Defra make it clear that it wants to use any replacement for HFA as tool for the delivery of wider public environmental benefits and, in particular, to contribute to PSA targets. However, the lack of discussion of public preferences for particular types of upland landscapes and environment, and the omission of an analysis of the relationship between the upland environment and upland farming systems is a weakness of the document.

It is not surprising that overall Exmoor farmers prefer that the current HFA system is not replaced. However, given that this appears to be an unrealistic outcome in policy terms, **Option 1 receives considerable support both from the respondents to the postal survey and in terms of a positive, albeit marginal, net impact on farm and household incomes.** There would, however, be some losers as funds were redistributed from DA to SDA land. The positive impact on NFI overall (likely to be in the region of 5%) is, on the basis of survey results, sufficient to slow down some planned charge or at least reduce the incidence of change (that may otherwise be interpreted as cost saving and income generating behaviour). That such a small change can impact on plans for the future indicates just how finely balanced the

current farming economy of Exmoor is at the present time. As a result, the move from a policy environment represented by Option 1 to that represented by Option 2 reflects a 'tipping point' with increased and widespread change ensuing.

Option 2 could see reductions in NFI of a magnitude sufficient to stimulate significant structural change within Exmoor National Park. Fewer farmers would be committed to remaining in farming, the expectation of succession would decline and more farms would be sold. Amongst remaining farmers, many would cut livestock numbers and commons grazing may be threatened. Moving beyond the farm gate, there are likely to be significant knock-on effects for farming–related rural economic activity, in particular for contractors and input suppliers. Detailed consideration of the environmental implications is beyond the scope of this research but clearly, further extensification is not necessarily a positive development[5] in terms of current biodiversity objectives and it is likely that the landscape would take on a less managed, more neglected appearance.

Although there is debate amongst the conservation profession regarding the pros and cons of 'wilding' or 're-wilding', conventional wisdom is that the public in general and tourists in particular favour well managed, pastoral landscapes. As such, **Defra should seriously consider whether the impact of Option 2 on Exmoor is likely to be consistent with achieving PSA targets and whether the resulting upland environment would be compatible with what the public would want to see.**

Option 3 would see a deepening of the trends identified under Option 2 and it seems likely that it would lead to fundamental change in the appearance of Exmoor National Park, as well as obviously impacting on farmers, their families and allied businesses. Such change is not likely to be compatible with existing landscape and biodiversity targets although it would not preclude the development of alternative, 'wilder', targets.

In the medium term at least, Option 3 appears as unrealistic as the 'no change' option and Defra clearly favours Option 1. Even so, **further consideration should be given to incentivising environmental enhancement and alleviating existing concerns regarding an unfavourable movement in the ratio of sheep to cattle. The positive impact of Option 1 identified in this research is based on current SFP payment levels. If the SFP is significantly reduced in the next five years (as the area based element becomes larger and as modulation rates potentially increase) concerns about under-grazing and neglect will continue.**

[5] In a context where seasonal under-grazing is already a concern.

Thus, **reform of LFA policy should not be considered in isolation of the relationship with wider CAP change**. Moreover, detailed consideration should be given to the inclusion of additional bonus payments under the new upland policy regime. If (in the absence of any widespread an sustained debate concerning the desirability of alternative upland futures) it is agreed that broadly maintaining the current appearance of the uplands alongside improving biodiversity is a desirable objective then **incentives to maintain a mixture of cattle and sheep should be considered** (and would receive support from Exmoor farmers).

Finally, it is clear that under the emerging policy regime it may be difficult (if not impossible) to support farmers because of a generic 'social contribution', although upland farmers in particular should be supported in their role as countryside managers and as agents of rural development. Exmoor farmers recognise their role as managers of a distinctive and valued environment and would react positively to a **new system of environmental capital payments** as well as incentive/income forgone payments. Capital payments, for example, for boundary restoration but also for more ambitious green tourism initiatives could help strengthen the link between environment and economy and contribute to farm household income.

References

Commission of the European Communities (1999) Council Regulation 1257/1999 on support for rural development from the European Agriculture Guidance and Guarantee Fund (EAGGF) and amending and repealing certain Regulations. Official Journal (L160)of the European Commission, Brussels.

Cumulus Consultants (2005) 'Assessment of the impact of CAP Reform and other key policies on upland farms and land use implications in both Severely Disadvantaged and Disadvantaged Areas of England, Final Report for Defra. Defra, London.

Defra (2002) 'Exmoor ESA' http://www.defra.gov.uk/erdp/docs/national/annexes/annexx/exmoor1.htm

Defra (2006) 'Consultation on the new uplands rewards structure' http://www.defra.gov.uk/corporate/consult/rdp-uplands2007-13/index.htm

Haigh, N (ed) (2006) Manual of Environmental Policy in the EU and Britain. Elsevier, London.

Lobley, M., Wakefield, D. and Butler, A. (2004) 'The state of farming on Exmoor 2004' Centre for Rural Research, University of Exeter, Exeter.